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Some Questions

CONCERNING THE INFLUENCE OF TROPICAL CLIMATE ON MAN.

An Advanced Lecture in Hygiene delivered under the Auspices of the University of London

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PROFESSOR OF HYGIENE AND MICROBIOLOGY, UNIVERSITY OF UTRECHT.

IT has been complained, and not without justice, that between the tropics the fertile regions are unhealthy and the healthy ones sterile. It is, indeed, the high temperature and the moisture combined that, especially along the coasts, not only cause the luxuriant growth of plants, but also give rise to a number of originators of disease, and, moreover, exercise directly an exhausting and enervating influence on man. In comparison with former times, however, a considerable improvement is noticeable in the general sanitary condition of tropical countries, though it is not always possible to express it in figures. Their proverbial unhealthiness for the white man has lost much of its terror, since it is no longer for the greater part the scum of European society from which the immigrants are recruited, and since the conditions of living there have so much improved, with better medical aid and sanitary measures more amply provided for. No wonder that the pessimistic criticisms of yore have already undergone a considerable change and are even in a fair way to be replaced by rather too optimistic views.

Malaria, yellow fever, cholera, dysentery, plague, beri-beri, ankylostomiasis, those scourges of the tropics, are all, it is argued, avoidable diseases—avoidable, because science has discovered their causes and thus provides the means of combating them with success. Well, then, take them away, those diseases with their causes, and there will remain the healthy inhabitant of the tropics, the "permanent summerman" (Stokvis).

A great deal has been attained in this respect, but, on the other hand, it must be acknowledged that in practice many difficulties have cropped up, some of them quite unforeseen and some of them as yet insurmountable, and even if one succeeded in closing Pandora's box entirely all would not be gained. Health is not a mere negation of illness, it also implies something positive. The full use and control of the mental and physical functions, a vigorous constitution, a considerable amount of bodily well-being—those characterise the healthy man. Much of this the sojourner in the tropics lacks, though he may be exempt from illness. This especially applies to the white man, and the consolation that he is a "permanent summerman" cannot make up for this deficiency.

What at once strikes every one who arrives in tropical regions for the first time is the pale complexion of nearly all the whites. It is such an ordinary phenomenon that people who have resided in tropical climates for some time hardly notice it. To them, however, the newcomer with his fresh colour is a striking appearance. It is not long, however, before the blood has disappeared—usually within a year—to be replaced by a pale complexion, which is often yellowish, owing to pigmentation. This change was generally considered a sign of the development of the so-called *tropical anæmia*. In the absence of duly equipped institutions for experimental research in the tropics, people formerly—and occasionally even now—held this more or less a priori view of the physical changes that take place in the inhabitant of cooler regions. His former surroundings, it was argued, and his consequent natural disposition and organisation rendered his metabolism, heat production, and physical powers vigorous, the action of his skin, however, being often comparatively slight. His transference to the hothouse atmosphere of the tropics must work a complete change in that organisation in those functions. In other words, his body must undergo a process of acclimatisation if he is to adapt himself in the long run to surroundings so entirely different. When, to find an outlet for the body heat, his skin reaction has increased considerably and the sweat secretion has augmented to superfluity, he will gradually adjust himself to a limited production of heat. Not only is muscular action, the source both of mechanical force and of heat, avoided as much as possible during the hottest part of the day, not only does the metabolism become less intense and the need of food less urgent through the absence of the stimulus of the cold, not only does the breathing become less deep and conduct less oxygen to the blood, owing also to the rarity and humidity of the hot air, but the composition of the blood, too, is modified accordingly: it becomes thinner and paler. Or, as a French author (Saint-Vel) has it: "L'européen ne tarde pas à offrir le léger degré d'anémie qui semble physiologique tant il répond aux conditions de la santé sous ces latitudes. Il n'a plus besoin d'un sang aussi riche et d'une respiration aussi active; il n'a plus à produire une aussi grande somme de calorique pour résister à un climat rigoureux; il n'a qu'à s'accommoder au nouveau climat et à s'y laïsser vivre en quelque sorte."

Such was the generally accepted meaning of the supposed anæmia and the lessened vital power of the white sojourner in the tropics. He is enabled to endure the heat better, not by active resistance, but by a passive adaptation to it. Thus, according to the line of thought set forth here, the acclimatised white is a weakling, doomed to lead a languishing existence, an inferior person whose health is in a state of unstable equilibrium amid the many noxious influences to which he is exposed in the tropics. As a French naval doctor (Laure) expressed himself already 60 years ago: "En arrivant à Cayenne, on croirait tomber dans la cour d'un hospice." What a contrast with the native! According to the accepted notion, his pigmented skin, in its power to radiate heat, surpasses the white's so much that neither a frequently excessive, but at the same time debilitating secretion of sweat, nor a considerable diminution of the heat-producing vital functions is required to preserve the equilibrium of heat. So that in contradistinction to the white, who in the middle of the day seeks rest and shelter from the sun, he can remain in full activity. With him, therefore, there is no question of anæmia, of considerably diminished vital energy, of enhanced liability to morbific influences.

So much for the theory. It must be acknowledged that, since in this connexion physiological deduction has given way to experimental research, our notions concerning the influence of the heat on the constitution of the sojourner in the tropics has had to be rather considerably modified. In the Dutch East Indies this research has become possible through the establishment, more than 30 years ago, of the medical laboratory at Weltevreden (a suburb of Batavia), of which I had the honour to be the first principal.

It will be clear, after what I have said, what are the problems we have proposed to ourselves and selected for research. I flatter myself that the results of these investigations are still of sufficient interest to be stated here, the more so because in my perusal of the English literature on the subject it has appeared to me that they have remained all but unnoticed in this country.

TROPICAL ANÆMIA.

Is the pale complexion of the white sojourner in the tropics a symptom of anæmia? Almost simultaneously with and independently of us, two other investigators put this question to themselves—viz., the Frenchman, Marestang, and the Dutchman, Van der Scheer. A count was made of the red blood cells per

volume-unit of the blood, as also a colorimetric determination of the hæmoglobin content. Both were found conformably by the three experimenters to lie within the same limits for the white sojourner as in the case of the newcomer and of the native. It stands to reason that for these experiments persons were chosen who might be considered healthy, though the first group looked pale. Later on these investigations were extended in the Weltevreden Laboratory to the specific weight and the water-content of the blood as well as of the plasma, again with the result that no differences could be detected. The same may be said with regard to the osmotic tension. Nor was there any evidence of micro- and poikilo-cytosis, as will occur in anæmic conditions. So the above question, whether the pale complexion is a symptom of anæmia, must be answered in the negative.

Besides, we had an opportunity to make observations in a couple of cases on the regeneration of the blood after acute traumatic hæmorrhage. The first case concerned a Dutch sergeant, 32 years old, who had been in the Indies for three years and a half, and who, in an attempt at suicide with a razor, had inflicted a deep wound on the front of his neck, cutting one of the thyroid arteries. I did not get an opportunity of examining him till a fortnight afterwards. The number of red blood cells amounted then only to 3,620,000 per c.mm., the hæmoglobin being 72 per cent. An examination repeated every ten days showed that the first had returned to the normal 34 days after the loss of blood and the other 44 days after it.

The second case was that of a Dutch soldier, 25 years old, four months in the Indies, who on going outside one morning before sunrise happened to fall on a splinter of glass, which penetrated deep into the right side of his neck, just above the collar-bone. About an hour after the accident he was found lying unconscious in a pool of blood. I had the opportunity of examining him on the next day. It appeared that the right truncus thyreo-cervicalis (a. clavicular) had been severed. The red blood cells amounted to 3,162,000, and the hæmoglobin was 60 per cent. In determining the relative volume of the aggregated blood cells it was also found that about 40 per cent. of the blood must have been lost. Notwithstanding this he looked rather ruddy, another proof how one may be mistaken in judging the condition of the blood by appearance only. The specific weight of the blood was 1·046 (normal 1·058), that of the blood-plasma 1·027 (normal 1·029). The weekly repeated examination showed that the loss had been completely restored after seven weeks.

In comparing these results with the statements in the literature on the subject, one gets the impression that the regeneration of the blood after a great loss is not less complete in healthy white men in the tropics, nor markedly slower than in the temperate climate. All things considered, *there exists no purely physiological anæmia of hot countries.*

It might be thought that the pale complexion was due to a diminution of the total mass of the blood (oligæmia). Methods, such as those of Zuntz, Haldane, &c., to determine this mass in vivo were not yet known at that time, and in that direction, therefore, the investigation might be extended. However, I do not expect much from this, partly because these methods are not yet very exact, partly because neither clinical nor post-mortem observations indicate that the vascular system has suffered in this way. Notwithstanding the pale complexion, the pulse is fairly well-filled, the blood pressure not lowered, and the internal organs do not give the impression of a paucity of blood. It is even the current impression among tropical practitioners that the abdominal organs are overfilled with blood, seeing the pronounced liability to diseases of these parts, often attended with bloody excretions. In this connexion Van der Scheer calls attention to the experiments of Dastre and Morat which have brought to light an antagonism between the blood-vessels of the bowels on the one hand and those of the muscles and skin on the other. This would seem to account, not only for the paleness of the sojourner in the tropics, but also for his sensation of weariness and disinclination to physical exertion. To me all this seems too hypothetical, ingenious though it may be, and I think the explanation is to be sought in another direction, although it is rather an analogy than an explanation that I offer. In the cooler regions it is only the regularly uncovered skin, directly exposed to the influences of the weather, that is generally distinguished by richness of blood; this ruddiness is a local phenomenon. The covered skin, on the contrary, is usually pale and—this is the analogy referred to—may be said to be in an artificially tropical climate with a temperature amounting as a rule to more than 30° C. The same parts of the skin that are usually red in the cool climate, with its strong variations of temperature, in course of time assume a pale colour when they are almost continually in warm surroundings. Nor does the skin of the face form an exception in this respect. We need only call to mind the pale complexion characteristic of people who lead a sedentary life. In these cases, too, as Sahli and Oppenheim have demonstrated beyond dispute, this need not at all be an indication of general lack of blood.

Finally, I wish to point out that in the Malay race, too, examples may be found of fresh complexion, though tempered by the skin pigment. I saw this not only in Holland but also in the mountains in Java and Sumatra, and I remember very well—I was then so many years younger—that it made the young native girls there look exceedingly pretty. In the hot littorals, on the contrary, the skin of the native's face is also anæmic, although nobody will consider this as a symptom of general anæmia, as has been done in the case of the white.

METABOLISM AND HEAT PRODUCTION.

In tropical countries the aborigines live chiefly on vegetable food, which is ordinarily rich in carbohydrates, comparatively poor, however, in proteins, and often also in fat. In my time rather extensive investigations were made in the Weltevreden Laboratory into the food both of Europeans and Malayans. Each of the subjects of experiment furnished us for four days successively with a sample of his daily ration for analysis, and the urine and fæces were also examined.

The following is a summary of the results:—

—	Body-weight.	Protein.	Fat.	Carbo-hydrates.	Alcohol.	N. in urine.	Calories.
	kg.	g.	g.	g.	g.	g.	
8 Europeans	65·4	99·6 (88·6)	83·8 (94·4)	264·2 (97·0)	28·5	13·45	2471
5 Malay students ..	49·6	73·3 (76·1)	30·2 (83·0)	471·9 (97·7)	—	8·74	2512
4 ,, servants ..	47·5	67·7	21·8	484·6	—	8·45	2465

N.B.—The figures in parentheses indicate the percentage of utilisation.

The difference between the two races as regards the protein and fat content of the food is obvious. With the Europeans only 25 per cent. of the protein was derived from vegetable food, with the Malayan 70–80 per cent. I am not so sure that this is due to instinctive compliance with the requirements of the climate, for we see the same thing in the Japanese, who is not really an inhabitant of the tropics. Owing to the relative cost of animal food, economic causes may be at work here similar to those which elsewhere compel the poor to become vegetarians. Indeed, on festive occasions the Malayan is by no means averse from animal foods and from fat (cocos oil).

From Rubner's standpoint, that the organic foodstuffs can interchange in isodynamic proportion, it is to some extent immaterial from which of them the body derives its necessary energy. On the other hand, however, we should take into account the specific

dynamic action of protein, which manifests itself by an increased heat production above the basal level. Moreover, according to Chauveau, in the performance of muscular work the metabolism of fat causes a greater part of the liberated energy to be converted into heat than the metabolism of carbohydrates—a view which tallies better with the experience that a diet rich in fat is more appreciated in cold than in warm countries.

A peculiar view, assigning great value to the source of the fat, has been put forward by Körfer. He even proposes to distinguish the three zones, into which climatology divides the surface of our planets, as train-oil zone, suet zone, and vegetable-fat zone.

Finally, some medical men, obsessed by the dogma that a substantial food must needs be rich in protein and fat, have advocated its wholesomeness for the tropics as well, overlooking the fact that whole nations and working classes can develop well and live healthy lives on a minimal consumption of animal food. They would force upon the indigenes an unusual diet, prepared after European recipes, specially with a view to the prevention of beri-beri. But both in the Dutch East Indies and in Japan these efforts to effect a radical change in the diet of soldiers and sailors have failed; there is no forcing the taste after all.

Returning to our figures after this digression, we want in the first place to point out that the utilisation of the various foodstuffs for both groups of subjects was very satisfactory. The caloric value of the average daily ration amounts for both groups, in round numbers, to 2500 calories. Our European subjects (hospital and laboratory doctors, men nurses) fall under Rubner's first category of labour (light labour), for which he allows 2630 calories per 70 kg. of body-weight. Calculated for the same body-weight there results for our European subjects $\left(\frac{70{\cdot}0}{5{\cdot}46}\right)^{\frac{2}{3}} \times 2500 =$ 2590 calories. In the same manner the calculation gives for our Malayan subjects 3140 calories. They approach more nearly to Rubner's second category (medium labour), for which he allowed 3120 calories. So our findings for both categories accord pretty well with Rubner's and confirm what Voit, solely judging from information that had reached him about the food supply in hot climates, had already stated as his impression years ago, *the food requirement is, with about similar labour conditions, as great in hot as in temperate climates.*

Nevertheless, since muscular work and the consumption of food influence metabolism to an extent which cannot be estimated with sufficient accuracy, it was advisable to exclude them. As is known, the usual method for this is the determination of the respiratory gas exchange in the morning hours before breakfast in persons at complete rest. From the amount of oxygen consumption, taking into account also the respiratory quotient, the basal metabolism is calculated—i.e., the number of calories produced per hour per square metre of body surface. We found, both for the white and the coloured race, an average of about 40 calories, which corresponds entirely with the figures given by other investigators for mean Europe and for North America. On the other hand, Ozorio de Almeida in Rio de Janeiro gives considerably lower figures for both the white and coloured races. In support of mine I may add that my own basal metabolism, examined in winter in Holland in a room temperature of 9° C., appeared to be the same as it had been two years before in a temperature of 27·5° C. in Batavia. The opportunity of making such a control experiment on the same person will naturally remain exceptional, hence, after my return to Holland, I made comparative determinations of the basal metabolism in ten persons in summer- and in winter-time. Here, too, no essential differences could be noticed, though, with about the same clothing, the difference in room temperature was very considerable (16° C.).

I readily admit that when in Batavia I started the investigations described here, I had not quite expected these results, and I was inclined to share the view that the heat production would be lessened under the influence of the hot climate. Not that I believed in what I would call the "bellows theory," the conception that the combustion in the body might be compared to that of an open fire, which burns the more fiercely the more air is conveyed to it. There is no doubt whatever that though in a cool environment more oxygen were to be introduced into the organism than in a hot one, the consumption of it need not therefore be increased. The living organism regulates this according to its requirements, and possesses an excellent compensating mechanism for the purpose. Besides, it should be borne in mind that, even in the coolest and driest atmosphere, before the air has reached the lung cells, it has already been heated within the air passages to body temperature and saturated with vapour. Nay, in ordinary, quiet respiration the inhaled air does not even stream into the lung cells, but reaches no farther than the air passages, whence the gas exchange with the lung cells is brought about by diffusion. So it is never the outside air as such that is directly concerned in the gas exchange in the lungs, but always warm and moist air—no matter in what climate or season.

What suggested to me the occurrence of a less vigorous metabolism in a hot environment was the experiments on animals made by the school of the famous physiologist Pflüger, who concluded that it is the stimulus exercised by the cold on the skin that automatically stimulates the heat production in the muscles, even without necessarily betraying itself by noticeable contractions (so-called still labour). A second consideration for me was the following: The calculation of the basal metabolism starts from the experimental datum that the heat production is proportional not to the weight but to the surface of the body. In this was seen a confirmation of an already old hypothesis, advanced first of all by Immermann and by Helmholtz, that in warm-blooded animals there is a close relation between the intensity of the metabolism and the development of the body surface—that is to say, that smaller individuals with their relatively larger surface lose more heat per kg. body-weight than larger ones, and must produce more accordingly. Assuming this explanation to be true, it would follow that the heat production regulates itself automatically after the heat loss. If this were so, one might expect a direct influence of climate and season on metabolism and heat production. However, it has appeared since, among other things from investigations by my countryman Buitendijk, that the relation between metabolism and body surface not only holds good for warm-blooded animals, but also for cold-blooded ones, so that the explanation just given can hardly be true.

Thus, rather contrary to expectation, we could not bring to light any real differences, as regards metabolism and heat production, either between a cool and a hot area, or between the white and the coloured race. However, our results only referred to the state of bodily rest, as also to light muscular work of the whites, and moderate work of their Malayans. Now, it seems a general experience that the white cannot in the long run keep on doing heavy muscular work in the tropics; he must leave it to the natives.

I had intended to extend my investigations of the metabolism in that direction, but had no opportunity, owing to my return to Holland. I was then able only to determine the respiratory gas exchange of a couple of white subjects during rather heavy labour and at room temperatures varying from 12° to 30° C. The investigation lasted from the month of March to the middle of July. My subjects, trained cyclists, were seated on a stationary bicycle arranged as an ergometer, so that by the pedalling motion a measurable and dosable resistance was overcome. The tempo of pedalling was given by a metronome and amounted to 130, the labour performed to

380 kg. a minute. The determinations of the gas exchange were made after 20 minutes' pedalling. At the conclusion the subjects, though not exhausted, felt tired, just as if they had taken a rather long bicycle ride. Now, in contrast with what had been found for the state of complete rest, it appeared that the temperature of the environment, as soon as a certain limit upward is surpassed, exerts a decided influence on the gas exchange. This limit in both subjects was reached at 21°–22° C. The average oxygen consumption above that limit increased for the one by 31 per cent., for the other by 48 per cent. The carbon dioxide production ran pretty well parallel with it, so that the respiratory quotient remained about the same. The respiration volume, too, increased, though in a less degree.

Consequently the labour is performed less economically, and this contributes to our getting so much sooner fatigued in the heat.

HEAT REGULATION.

As we have seen, there is, according to our findings, in a hot environment practically no question of an automatic limitation of the heat production—in other words, of a *chemical* heat regulation. Almost the only thing that has any effect in this respect is an adequate limitation of the muscular labour. For the rest, it is for our body to regulate the heat loss which is effected chiefly by the skin and the lungs, and that in such a way that it may be appropriately called *physical* heat regulation. The lungs hardly take part in this; they yield less heat to a warm, moist atmosphere than to a cold one, and one does not get the impression that during a man's labour in the heat the ventilation of the lungs increases in such a degree that there may be a question of compensation, as is so clearly seen in some animals—e.g., dogs. We may, therefore, confine ourselves to the heat-regulating function of the skin, and it is essential to examine whether the white is in this respect inferior to the coloured skin. In this connexion we shall have to consider the three ways in which the skin yields up the body heat—viz., radiation, convection, and perspiration.

The skin is protected by its pigment against the inflammatory action of the sunlight; at the same time, however, the coloured skin absorbs more heat than the white one, which reflects a greater part of the sun's rays. Of two identical thermometers the bulb was covered with a double layer of skin, with the difference that in the one white skin was over brown, and in the other just the reverse. Both thermometers were placed then in a closed humid space, irradiated equally by the sun. After some time the thermometer with the white skin outside had risen to 47·5° C., that with the brown outside to 50·1° C. A similar difference may be observed by merely touching the living skin, after the sun has for some time shone on it. On the other hand, it might be that the dark skin radiates the body warmth more easily. The much-quoted author Woodruff remarks in this connexion: "Black bodies radiate heat to cooler ones much faster than bright bodies do. Blond men can stand cold far better than the negro, who radiates so freely that he needs more clothing and warmer houses. The inability to radiate heat makes the white man suffer from overheating in the tropics, his temperature rising with that of the air."

This assumption of Woodruff's seems to me to be a physical heresy. The colour of an object has no influence on the emission of dark heat rays. Provided the surface be the same, the radiating power of white lead is equal to that of soot. We also found it the same for white and brown skin. The experiment was made as follows: Two entirely uniform tin boxes had their cylindrical surface covered with a double layer of skin in the same manner as the thermometers mentioned a moment ago, while the flat bottom and lid were clothed with a thick heat-insulating felt layer. Both boxes were then filled with water at 45° C., and the cooling of the water was read from the thermometers inserted in the boxes. Care was taken that no cooling was caused by air currents or by evaporation. The result of repeated experiments was that the two boxes—one with the white, the other with the brown skin outside—cooled equally in equal times. Consequently, there is no perceptible difference in radiating power between dead white and dead pigmented skin. There is no valid reason why it should be otherwise with the living skin.

This does not mean that there might not be in any other respect a difference in heat radiation between the two races. In treating of the basal metabolism we came to the conclusion that in the given circumstances the heat production per square metre is the same for the two races. Therefore, this must also be the case with the heat loss. This takes place in the three ways already mentioned, which are interdependent in such a way that the total amount remains the same. To mention an example, abundant perspiration must occasion a diminution of the heat loss by radiation and convection, and vice versa. I have found that in this respect there is really a difference between the two races. In order to make a fair comparison possible, parallel experiments were always made, and with the avoidance of anything that might modify the conditions of heat loss prevailing in ordinary circumstances. The subjects, airily dressed, were in rest during the experiment. We started from the consideration that, if the evaporation of the sweat through the thin, porous clothing of the parts of the skin to be examined could take place in a normal manner, a difference in heat emission by radiation and conduction must betray itself by a difference in the temperature of the air between the skin and its covering. I desist from describing the further arrangements of the experiments, which involved a great many more precautions. A summary of the average results may suffice here.

Temperature of the Air underneath the Clothing.

—	8 A.M.	10¼ A.M.	1 P.M.	5 P.M.
	°C.	°C.	°C.	°C.
8 Malayans	32·5	33·4	33·5	33·5
8 Europeans	32·3	33·1	33·2	33·1
Difference	0·2	0·3	0·3	0·4
Room temp.	25·7	27·3	27·8	27·4

The axillary temperature, averaging 36·7° C. in the morning for both groups, rose in the course of the day to 37° C. in the Malayans and nearly 0·1° higher in the whites, a difference which I observed regularly between the two races.

As regards the temperature of the air underneath the clothing just the opposite obtains. The differences are small—they range from 0·2 to 0·4° C.,—but they were observed so constantly, also in other experiments than those recorded here, that there is no doubt of their validity. Each time, too, it appeared that the difference became smaller the lower the temperature and the moistness of the air in the room, and would even disappear altogether at 25° and lower. In the experiments recorded, where the room temperature varied from 25·7° to 27·8°, a difference between the two races of 3–7 per cent. in heat emission by radiation and convection may be estimated to answer to the differences of 0·20°–0·4° found in the temperature of the air underneath the clothing. In a higher room temperature they can be much more considerable—e.g., 14 per cent. at 32° C.

As has been observed before, it would follow from the preceding that conversely the heat loss by evaporation of sweat in the Europeans must surpass that in the Malayans. Of course, this could be ascertained by determining the body-weight just before and after the experiment. It is clear that, when under similar conditions in an equal lapse of time a marked

difference in loss of weight is found between two subjects, it may for the greater part be put down to an unequal evaporation of sweat.

We found the following average results of 27 parallel experiments lasting 75 minutes each. To make a more reliable comparison possible the subjects had been chosen in such a way that the average body-weight of the two groups was about the same. On an average the European weighing 57·4 kg. lost in moist still air of 32° C., 114 g. per hour; the Malayan, weighing 55·6 kg., 84 g. by perspiration.

Perspiratio Insensibilis.

—	Room temp.	Temp. underneath clothing.	Arm-pit temp.	Body-weight.	Loss of weight.
	°C.	°C.	°C.	kg.	g.
Europeans ..	32	34·6	37·1	57·362	143
Malayans ..	32	35·0	37·0	55·610	105

The difference of 30 g. per hour corresponds to a greater heat loss by evaporation of 16 calories, or just as many per cent. of the total heat loss, if we put this at 100 calories per hour. On the other hand, the Europeans show a smaller loss by radiation and convection, of which there was question just now, and which was estimated at 14 per cent. It goes without saying that this is rather a rough estimation, but our impression remains that the conclusion already arrived at is confirmed, or at least not contravened.

The question now arises whether the white man must evaporate more than the coloured one, because it is more difficult for him to get rid of his body heat by radiation and convection, or is the causal nexus just the other way? I think I can show that the latter is the case. The primary fact is that the heat stimulus incites the sweat secretion in the white more than in the coloured man; hence he perspires more, and consequently gives off less heat by radiation and convection. Yet his sweat secretion far too quickly goes beyond the limits of a rational heat regulation and becomes superfluous. A great part of it does not evaporate, the skin and the clothes become moist. With the Malayan this happens in a far less degree; so long at least as he is at rest he remains pretty dry to the touch, where the white already bathes in sweat. Accordingly, the latter, and especially the newcomer, has much to suffer from lichen tropicus, or so-called prickly heat, a troublesome, itching skin affection, from which the native seems to be exempt.

It is a priori not likely that the sudorific apparatus of the inhabitant of cool countries should be more developed than in the native of the tropics. When we commenced these experiments we were more inclined to suppose the opposite, and made an investigation at the time, which may perhaps be recounted, because of the simple and effective method in which it took place.

After the portion of the skin where the sweat glands are to be counted has been duly shaved, if necessary, and washed with ether and alcohol, it is coloured over a surface of about 20 sq. cm.—e.g., 4 by 5 cm.—with an alcoholic solution of fuchsin. As soon as the skin has become thoroughly dry, which may be accelerated by fanning, a piece of thin note-paper is laid on it without folds, keeping it in position by means of a moderately pressing flannel bandage. After some minutes the paper is taken off, and it will be found to be covered with red spots: the imprints of the sweat orifices. Wherever the paper is dry, indeed, the fuchsin does not come off; but as soon as there appears a drop of sweat from an orifice it dissolves some of the dye and leaves a red spot on the paper. The counting may be facilitated by the use of squared paper, and requires the observation of the same rules as in counting blood corpuscles.

We examined two Malayans and three Europeans. The average values for the various parts of the body are given in the following table:—

Number of Sweat Glands per sq. cm. Skin Surface.

—	Skin on—	Malayans.	Europeans.
1	Palm hand.	299	298
2	Glabella.	171	172
3	Instep foot.	151	175
4	Forearm (extensor side)	160	146
5	Forearm (flexor side)	162	166
6	Upper arm.	161	162
7	Thigh (extensor side).	135	141
8	Calf.	123	118
9	Back.	122	138
10	Manubrium sterni.	120	117
—	Average	160	162

Taking also into account the individual fluctuations among the same race we may conclude that there is no perceptible difference between the two races in the number of sweat glands.

Even taking his smaller body-weight into account, the Malayan as a rule imbibes less water with his food and drink than the white sojourner in the tropics. Now it might be thought that this was essentially the cause of the difference in sweat secretion. This may be true to some extent, but it does not account entirely for it, as is shown by further comparative perspiration experiments. In one of these, lasting three hours, all the subjects were given at the beginning 200 c.cm. water to drink. Then, after emptying the bladder, they were weighed. They now remained at rest in a room temperature of about 30° C., after which they were weighed again and passed the urine formed in the meantime. With about the same average body-weight the white now lost 310 g. by insensible perspiration, the coloured men only 248 g. on an average. Yet the volume of urine at the end of the experiment averaged 130 c.cm. for the former, only 56 c.cm. for the latter.

In the subsequent experiments we gave the Malayans a very plentiful quantity of water to drink, while we kept it entirely from the Europeans, except a few who complained much of thirst, and were then refreshed with a little water. Now, as long as the room temperature was not excessively high, we did not succeed in this way in getting rid of the differences between the two races, much less in reversing them. We found, e.g., insensible perspiration in the white 208 g., against 188 g. in the coloured men; volume of urine 180, against 93 g. Not until the same experiment was repeated—only for a somewhat shorter time, viz., two instead of three hours—in an artificially moistened atmosphere heated to 32·5° C. did the sweating increase so much more in the white that his urine volume was a little below that of the coloured one; insensible perspiration 182, against 158 g., urine 110, against 133 c.cm. To this has to be added the unevaporated sweat, the quantity of which, weighed together with the clothing, amounted to more than three times as much in the thirsting white as in the water-drinking Malayan (average 80, against 25 g.).

That the white sweats more plentifully and produces more urine is not, therefore, merely the consequence of his taking more water; the causal nexus is rather the reverse. As compared with those of the natives, his sweat glands and his kidneys show a greater activity, independent to a great extent of the water intake. He must therefore drink more in order to maintain the water content of his body. No doubt the greater activity of his kidneys is to be accounted for by the fact that he has to excrete nearly twice as much nitrogen as the native.

It is remarkable that notwithstanding this the weight of the Malayan's kidneys in relation to his body-weight is not less than that of the European's. At least, we found as the average of 21 determinations, 260 g. with a body-weight of around 50 kg.,

while for Europe this figure is stated to be 300 g. with a body-weight of about 70 kg.

ACCLIMATISATION.

We have seen that the old notions formed about the process of acclimatisation have as yet not been confirmed by direct investigation. It has not been possible to prove the existence of what might be called physiological anæmia. In a condition of rest and of moderate labour the metabolism, and consequently the heat production, has been found by us to be on the same level in the two races, and not more considerable in a cool climate than in a hot one. In accordance with the assumption that there is a lack of chemical heat regulation, we see the physical one in the hot environment coming very much in evidence.

The chief objectively perceptible difference between the two races consists in the function of the skin. The coloured man is by his pigmentation better protected against the chemical active rays of the sun, and he is not so subject to excessive sweating. Now, in those two respects there can be, in some degree, a question of acclimatisation for the white, though not to such an extent that he can compare with the coloured man. For the rest it would appear to me that the much-discussed acclimatisation consists rather in an external than an internal process; rather in making, by imitation and custom, a second nature of a manner of living more adapted to the climate than in adequate changes of the bodily organisation as such. Hence, let us have no manner of living, no house arrangements and clothing such as tyrannical fashion prescribes in Europe, and which are but too often slavishly imitated in the tropics. Indeed, the native's frugality both in respect to food and drink, his, as a rule, calm, resigned view of life, his rule of *festina lente*, would deserve, *from a purely sanitary standpoint*, to be set as an example to the white sojourner in the tropics; at the risk, however, of his being after all no more in the full sense the pushing power, so necessary for the development of tropical countries. In the meantime, it would be rash to conclude from the results of comparative race physiology that the former pessimistic views ought to be absolutely relegated to the realm of myths, as some, partly on the strength of my experiments, have already done. The latter are, if I may say so with due modesty, "plus royalistes que le roi." Our investigations in the tropics have been limited to the condition of rest or light labour. What would have been the results could they have been extended to heavy labour, and especially of long duration, which makes higher demands on the bodily functions, and not the least on the compensatory actions? Will not, then, the heat regulation in the white prove to be sooner insufficient, and will not the fatigue, the ultimate exhaustion, set in sooner than in the coloured man? Will habituation, adaptation, training, in short, acclimatisation, appear possible then? These questions cannot be answered, as has been done, by postulating equality, even with regard to the climate, on the strength of anthropological theories. Although we accept the unity of origin of mankind, it will remain, no doubt, true for ever that what ages and climate have separated cannot be brought together again at once by an authoritative pronouncement.

It is true the coloured man, too, does not walk under palm trees with impunity; he, too, suffers from the heat; he, too, is, as a rule, studious of his ease. But still, there is no denying that the atmosphere of the tropics, often so windless, so leaden, oppresses him less than it does the white, to whom continuous mental and physical strain can become quite a torture. There are, indeed, instances of whites in the tropics braving fatigues when out hunting or on military marches, although we must not overlook the fact that not a few have fallen victims to these exertions, or that such strenuous efforts were followed by an ample time of rest. This is not the same as continuous rather heavy labour, even during the hottest part of the day, such as is performed by an agricultural population.

It has been pointed out that on steamers in the torrid zone the European stokers are advantageously replaced by negroes and East Indians. Schmidt, on the contrary, found that with the same amount of labour the negroes were not superior to the whites. He could not discover any difference in the increase of body temperature, the pulse, and the respiratory frequency. Hilger, however, found that after labour in an overheated space the body temperature of a negro returned sooner to the normal than that of a couple of whites. And even Schmidt questions whether, as is the case with the native, the white's working power will in the long run maintain itself in the tropical heat, which is after all the principal thing.

What it really is that makes the heat so exhausting we are far from apprehending. The physiology and pathology of fatigue are still a little explored field. By the adoption of toxins as products of muscle metabolism not all cases are explained, ours among the rest; for fatigue in the heat makes itself felt often immediately after waking in the morning, and is often lessened by slight bodily exercise. The state of weariness and listlessness coupled with psychical irritability, to which the European gradually becomes subject in the tropics, has always reminded me of the syndrome to which has been given the name of neurasthenia or nervous exhaustion. So far it would be better to speak of tropical neurasthenia than of tropical anæmia, only we should then easily form an exaggerated notion of it. If no naturally weak nervous system, no mental or physical overstrain, no illness, no aggravating circumstances of a social or moral nature have contributed their share the phenomena are pretty transient; they disappear as soon as fresher air surrounds us.

COLONISATION.

The question whether the colonisation of whites in the tropics is possible in the full sense of the term is not one of a purely hygienic nature. Let us leave alone for a moment the great variety of factors which come into play here, and let us see what mere experience teaches. For more than three centuries there has been a continuous stream of thousands and hundreds of thousands of people going from Europe to oversea lands to which Portuguese and Spaniards have shown the way. And the result? Everywhere outside the torrid zone, and in the countries bordering on it, wherever summer and winter alternate, in North America, South Africa, South Australia, Tasmania, and New Zealand, we see the white race, braving all dangers and difficulties, gain a firm footing, pressing back the native, supplanting him.

How different in the hot regions! The thoroughbred white man attains nowhere any further than to an aristocratic minority. Wherever things seem otherwise, as in the lowlands of Mexico, in some West and East Indian islands, it is not they and their pure descendants who form the real nucleus of the population, but a more or less coloured people, the product of cross-breeding, who here and there, as Réclus has it, by a "complaisance du Fisque" have undergone a "blanchissement officiel." Now I do not wish to argue that the mere fact of unmixed white colonies not thriving anywhere in a tropical climate is a proof that for purely sanitary reasons there is no possibility of their so doing. For, indeed, if the viability of the white race in the tropics remained unimpaired, yet the pure blood propagation in following generations would be no more than an exception, with the manifold opportunities for the mingling of the races. One might, for instance, argue with the same justice that Germans in the long run cannot stand the climate here, because, notwithstanding the many immigrants, nowhere in this country has a German colony come into being. Possibly, too, the special aptitude of Jews for colonisation is not so much due to natural causes as to the traditional custom of keeping their race pure and

not allowing it to disappear in the multitude. But it cannot be denied that, whereas the white races dominate nearly everywhere in the temperate zone, in the tropics they get no further than a numerical minority, and this proves at any rate that the native race can engage with much more success in the struggle for life, that, therefore, the superiority of the white race is only a relative one. Indeed, where the native population was thin-sown, it has been necessary to import men from elsewhere, negroes, Indian coolies, proof against hard toil in the hot climate, to supply the urgent need of labour.

Now it will not do to say that it is not so much the climate of the tropics as the diseases prevailing there that handicap the white race in comparison with the native one, for the latter has certainly to suffer no less, nay, often more, from them. The enumeration of the efforts at colonisation of the white race in the tropics is a continuous tale of misery. More than 50 years ago a commission appointed by the Dutch Government, of which the celebrated physiologist Donders was the medical member, gave a sad account of it, and since then experiences have not been more encouraging. Not that a fruitless struggle against the adverse qualities of the climate was the only cause of failure. Complaints of bad preparation, a wrong choice of colonists, inefficient management, want of protection and collaboration, if not opposition, on the part of the authorities were the order of the day. But were conditions better elsewhere outside the tropical regions? Were they all picked people of indestructible health, sobriety, working power, and enthusiasm for work, true pioneers of civilisation, those adventurers who went to populate North America and South Australia? And had in these cases provident authorities taken all the precautions necessary for the success of the colonisation; were political and economical circumstances so much more favourable here? To be sure, no. Nowhere has private initiative in colonisation been supported so much by the authorities as in tropical regions, and if, notwithstanding this, complaints such as have just been mentioned are well founded, it proves all the more how exceedingly difficult it has been to establish such a colonisation, how little in accordance with the natural course of affairs, how much to be considered an artificial culture amidst a freely propagating native population.

Will, in a far-off future, under possibly quite different circumstances, the conditions for colonisation become more favourable? It does not seem at all unlikely to me. Technical skill and industry, backed by science, stick at nothing where there is question of assisting man in the struggle for life. If he cannot be made fit for the climate they make the climate fit for him. I need only remind you of the so-called temperate zone, which has only deserved this name since man has succeeded in making himself to a great extent independent of the inclemencies of the climate, in creating comfortable surroundings by means of adequate clothing, the heating of his house, &c. Why is it not possible that the struggle against the heat should lead to a similar result, though more difficult to attain? Refrigeration in and outdoors, a considerable lightening of the task of the labourers by ever more perfected implements, quicker means of communication which reduce weeks to days, days to hours, and all that at such a moderate cost that it can be generally put into practice—to be sure, it is not indulging in chimæras to believe in this possibility in the future. In this light the question of colonisation is in the first place a technical economical problem, the solution of which may be safely left to time.

Whether this solution is desirable, what consequences it will have for the native, those are questions I do not venture to answer. The spirit of the times is not to be checked in its progress, and hygiene, too, must go with the current, trying by reliable information to contribute its share in leading it in the right direction.

A SERIES OF CASES OF TINNITUS AURIUM ASSOCIATED WITH ABNORMALITIES OF BLOOD PRESSURE.

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THERE are, attending almost every aural clinic, a number of patients who, in spite of having received over a considerable period of time a variety of forms of treatment, nevertheless continue to suffer from severe and intractable tinnitus, which causes them so much distress that their lives are a great burden to them. I have found that the majority of causes of tinnitus are well recognised, and well treated in those cases in which the cause is removable. And in those cases—such as otosclerosis and old head injuries—where the removal of the cause is as yet impracticable, the symptoms are often considerably relieved by bromides in one form or another, or by hydrobromic acid. It cannot, however, be said that bromides are in any sense a curative agent, except in those cases where tinnitus is proved to be due to excessive activity or irritability of the central nervous system as a primary cause. In other cases they merely relieve the symptoms, and in some they do not even do that.

But there is a large group of cases, which, although theoretically recognised by aurists, is not generally treated as an everyday practical problem; and it is this group to which I wish to draw attention, because I have found in it some very severe and distressing types of tinnitus, some of which I have been able to relieve to a considerable extent. I refer to those associated with a blood pressure that is either too high or too low. I believe them to be a great deal more numerous than is usually supposed.

I have dealt with these cases from the point of view of the practical clinician. I have endeavoured to establish a correct diagnosis where other diagnoses had failed, to prove the correctness of the diagnosis, where possible, and to propose a definite line of treatment. I was led to investigate the blood pressure of these patients owing to the fact that they appeared without exception to be of middle age or well beyond. They also appeared to suffer from a degree of tinnitus more severe than is usual in tinnitus from other causes—more severe, in many cases, even than that of otosclerosis. I have divided them into four main groups for purposes of greater lucidity.

GROUP 1.—*Tinnitus Associated with a Low Blood Pressure.*

CASE 1.—Widow, aged 79, complained of very severe tinnitus. Had a considerable degree of deafness—i.e., she could hear the raised voice at three feet. Stated that she could not hear owing to the loudness of the noises, which kept her awake at night. She had had them a long time; and recently they had started to take the form of voices speaking to her. The noise was bilateral. The tympanic membranes were slightly retracted, but repeated Eustachian catheterisation showed clear tubes, and produced no improvement. Months of treatment with bromides had no effect. Tuning-fork tests impossible, the forks being drowned by the subjective noises. Patient conversed in a very loud voice! This case was one of the worst cases I have seen. The tinnitus was gradually producing insanity. Her blood pressure was only 105 mm. of mercury.

CASE 2.—Male, aged 54, complained of loud noises in both ears. No deafness, no apparent aural cause; Eustachian tubes clear; patient had no other complaints and was apparently in good health. The teeth were in order. His blood pressure was 115 mm.

CASE 3.—Female, aged 41, suffering from severe noises in the left ear which keep her awake at night. They had come on during the last few months. Right ear normal, but in childhood she had a discharge from the left ear. There was now slight deafness in left ear, and an old healed perforation of the membrana tympani with some scarring. Blood pressure 105 mm.

CASE 4.—Female, aged 60, deafness and noises, with Eustachian catarrh. Eustachian catheterisation, and treatment of the nose improved both the deafness and the noises, but by no means cured them. Her blood pressure was 115 mm.

It may quite justifiably be objected that because a low blood pressure coexists, with the tinnitus and aural conditions, that it is not necessarily a causative factor. But I regard it as more than a coincidence because of its frequency and because of the following case :—

CASE 5.—Female, aged 20, complained of deafness and tinnitus. Paracusis was another symptom. She was suffering from otosclerosis with a marked catarrhal element which disappeared on treatment, leaving a basis of otosclerosis. Her blood pressure was 125 mm. I gave tab. trinitrini 1/100 gr. b.d. for a week purely as an experiment. She returned and said that the noises were infinitely worse, and now kept her awake at night. Her blood pressure had fallen to 105 mm. On leaving off the trinitrin the tinnitus returned to its usual condition, which caused her inconvenience but as yet no serious worry. Her blood pressure returned to normal.

This case shows how the lowering of the blood pressure adds to the severity of the tinnitus in a patient with a normal blood pressure suffering from tinnitus from another cause; and taken with the previous cases proves the causative effect of a low blood pressure.

GROUP 2.—*Cases Associated with High Blood Pressure Improving on Administration of Trinitrin.*

CASE 6.—Female, aged 49, suffering from severe tinnitus and some deafness in the left ear. Left drum definitely retracted, and air entry to Eustachian tube was poor. Tinnitus made worse by exertion, always increased towards end of day, and kept her awake at night. A day of rest always improved the noises. Many months of Eustachian catheterisation, and of bromides, had no effect in improving the noises. Blood pressure 160 mm. She was then given tab. trinitrini 1/100 gr. nocte for one week, and returned to say that the noises had distinctly improved and that she could now sleep well. The trinitrin was then increased to 1/100 gr. t.d.s., and at the end of a month she told me that the noises had practically gone, for which she thanked me profusely. I have not seen her since. Six months later she wrote to say that there was still "some improvement."

CASE 7.—Female, aged 62, had no deafness, but had very severe tinnitus causing insomnia. Tympanic membranes only slightly retracted, but some months of bromides and Eustachian catheterisation had no effect. Blood pressure 190 mm. Treated with tab. trinitrini 1/100 gr. nocte, she was able to sleep. After a week of taking it at night she took 1/100 gr. three times a day, until in a month the noises had almost disappeared. She wrote six months later to say that the noises were still "better."

CASE 8.—Female, aged 44, complained of slight deafness in right ear, with loud tinnitus which kept her awake at night. Her right ear was disorganised as a result of obsolete suppurative otitis media which had left the tympanic membrane broken and scarred. Administration of bromides had no beneficial effect. Blood pressure was 150 mm. She was given tab. trin. 1/100 gr. b.d., which so much relieved her that she was able to sleep well, and the noises only appeared for one day in every three, and were slight even then. I then did not see her for three months, during which time she took bromides, and the noises reappeared with their old intensity. She was again put on tab. trin. with beneficial results.

CASE 9.—Male, aged 68, complained of loud tinnitus in right ear, with occasional giddiness. No deafness. Eustachian catheterisation of right ear produced improvement for two hours only. Air entry quite free. No catarrh. Blood pressure was 190 mm. On taking tab. trin. 1/100 gr. b.d. for one month the noises became very slight, and the giddiness disappeared. Blood pressure was reduced to 175 mm. He returned after seven months because the noises had again become worse. On further administration of trinitrin they again improved. His blood pressure was still 175 mm.

CASE 10.—Female, aged 75, deafness and tinnitus in left ear, drum of which was very retracted. She suffered from nasal catarrh. Treatment of nose and Eustachian tubes had no effect, nor was she relieved by bromides. Blood pressure 190 mm. Tab. trinitrini 1/100 gr. t.d. for a fortnight produced no effect. On further administration she did not return, but wrote later to say she was "much better."

CASE 11.—Female, aged 61, complained of deafness and tinnitus in right ear, the latter very bad, keeping her awake at night. She was sent by a physician with the statement that her blood pressure was 200 mm., but had been reduced to 166 mm. after treatment with pot. iodide. The drug had not, however, improved the tinnitus or insomnia. The right membrana tympani was scarred from old sepsis, and Eustachian catheterisation showed a free air entry. She was given tab. trinitrini 1/100 gr. b.d., but only took it at night, because in the morning it made her feel giddy. The nightly dose had the effect of enabling her to sleep, and so gave her much relief. It did not, however, improve the noises by day. She wrote three months later to say that the noises had got "very much better," but had again returned with an attack of influenza and bronchitis.

GROUP 3.—*Cases Associated with High Blood Pressure where Trinitrin had Little or No Effect.*

CASE 12.—Female, aged 54, suffering from deafness in the right ear with severe tinnitus and headaches. The drum-head of her right ear was thickened and retracted. Continued Eustachian catheterisation and bromides gave no relief. Blood pressure was 175 mm. On taking tab. trin. b.d. for one week the headaches were relieved, and on continuing for a month the tinnitus was also slightly relieved. On further administration she did not return, and could not be traced later.

CASE 13.—Female, aged 59, complained of deafness and severe tinnitus in both ears. Eustachian catheterisation produced only slight temporary improvement, even after treatment of the nose. Bromides had no effect. Blood pressure 190 mm. Tab. trinitrini 1/100 gr. b.d. for two weeks produced no improvement. On further administration she did not return, and could not be traced later.

CASE 14.—Male, aged 64, suffered from tinnitus in both ears, with no aural cause. Bromides and iodides had no effect. Blood pressure 180 mm. He was given trinitrin for a fortnight and did not return. He refused further treatment on the grounds that he thought the trinitrin was a purgative.

The cases in this group in which no effect was noticed in a fortnight—i.e., Cases 13 and 14—are unsatisfactory, because on taking trinitrin for another fortnight they did not return. I had noticed in other cases that it was only after a month of treatment that any real progress was produced.

GROUP 4.—*Cases Associated with High Blood Pressure in which Local Treatment caused Disappearance of the Symptoms.*

CASE 15.—Female, aged 63, suffering from deafness in both ears, with retraction of the membranes, and from singing and thumping noises in the head which kept her awake. Her nose was obstructed by polypi. Blood pressure 195 mm. The removal of the polypi and Eustachian catheterisation produced complete relief of the aural symptoms.

I have found two or three other cases in this group whose particulars I did not take, because they seemed to show only that a high blood pressure together with a curable aural lesion does not necessarily cause tinnitus when the aural lesion is cured.

Estimation of the Severity of Tinnitus.

This estimation is difficult, because it is dependent upon information supplied by the patient. It is, however, very important from the point of view of investigation, and a short conversation will usually afford a good idea. I have come to divide them into two groups, the typical "slight" case, and the typical "severe" case. There are, of course, many intermediate cases and an occasional "extreme" case.

Class 1: Slight Cases.—These are divisible into (*a*) those who complain of deafness only, from whom the presence of tinnitus may be elicited by questioning; (*b*) those complaining of slight tinnitus, with or without deafness. Many of these will confess that they believe the tinnitus is always there, but they notice it only when they have nothing to do. They usually forget all about it for most of the 24 hours. It does not prevent them from sleeping. This class forms the majority of all cases of tinnitus.

Class 2: Severe Cases.—The hall-mark of this group is insomnia. It consists of those who, whether deaf or not, say they would not mind anything if only they could get to sleep and forget the terrible

noises in the head. They may either volunteer the statement, or disclose it without any too particular questioning, but there is very little doubt of them, as distress and anxiety are plainly written upon them. They are very neurasthenic, but the neurasthenia is the effect rather than the cause of their trouble, and disappears under successful treatment of the condition causing it. There are one or two extreme cases who are eventually driven to suicide or lunatic asylums by the ceaseless horror of noise that will not leave them. Of this type is Case 1.

All cases reported here are either of the "severe" or "intermediate" type, with one "extreme" case. None of them are "slight" cases. I am glad to say that it was some of the "severe" cases who received the greatest benefit.

Treatment.

1. Treatment of the aural disability. I believe this to come first, because in certain cases—i.e., Group 4—the treatment of the local condition may produce a rapid and complete cure.

2. Treatment of cases of low blood pressure. It seems obvious that if the low blood pressure is the cause of the trouble, as I believe it to be, then the correct line of treatment is to hand the patient over to a physician to raise the blood pressure. Bromides may relieve symptoms slightly.

3. Cases of high blood pressure. I think that after the aural disability is treated these also are best controlled by a physician, with occasional reference to the aurist.

Trinitrin.—I used tabellæ trinitrini at first purely for purposes of investigation, but have come to regard it as an essential element in the treatment. My reasons are two:—

1. In Cases 6 to 9 (where trinitrin did most good) the blood pressure was not outrageously high, and the temporary redistribution of the blood to the capillaries by trinitrin had a remarkably beneficial effect, especially at night in enabling the patient to go to sleep.

2. In Case 14 the patient's blood pressure was reduced from 200 mm. to 166 mm. while under the care of a physician, but there was no response on the part of the tinnitus which was as bad as ever. But on taking trinitrin at night she was able to sleep, and her general condition improved.

It is stated in text-books that trinitrin is one of the drugs which produce tinnitus aurium. I have found that it only does so in normal people by reducing their blood pressure below normal; in people with a too high blood pressure the tinnitus is relieved. It is possible that tinnitus in these cases is due to the contraction of the arterioles preventing a full distribution of blood to the labyrinth, and that the relief of this contraction improves the condition. But this is only conjecture. I have used trinitrin because I believe it to be the safest of the drugs producing the same effect in the same way; but I am open to correction on this point.

Conclusions.

1. That cases of severe tinnitus aurium with abnormal blood pressure form a large and important group in which much distress can be relieved. (The number of these cases can be estimated by the fact that I collected some 25 with ease in about three months. Those published, with one exception, represent the first 15 of these. The unpublished ones, of which I have not yet taken full particulars, do not appear to differ materially from the preceding. These 25, however, appear to be largely a residue of undiagnosed, and consequently incorrectly treated cases. Fresh cases only accumulate slowly.)

2. That severe tinnitus aurium may be due to a high blood pressure alone or to a low blood pressure alone, in which case it is usually found to be bilateral.

3. That it may be due to an aural lesion combined with a high blood pressure, or with a low blood pressure, in which case the tinnitus is on the side of the lesion.

4. That in the circumstances just quoted the tinnitus may be cured or improved by removing the aural lesion alone, or by reducing the blood pressure to approximately normal, or by doing both.

5. That trinitrin is of great value as a therapeutic agent in the cases associated with a high blood pressure, as it appears to have a specific effect in relieving the tinnitus.

I hope to make further investigations with regard to tinnitus due to low blood pressure. I have to thank Mr. Harold Barwell for his help and encouragement in undertaking this research; and also Mr. Herbert Tilley and Mr. Lionel Colledge for permission to publish some of the cases.

NOTE ON
THE DIAGNOSTIC VALUE OF X RAY EXAMINATION IN TRAUMATIC INTESTINAL RUPTURE.

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IN a recent paper on traumatic intestinal rupture[1] attention was drawn to the enormous mortality which attends this accident, and the view was expressed that in at least some cases the detection of a localised pneumo-peritoneum might prove of diagnostic value. The following case, in which the duodeno-jejunal junction was ruptured, is of interest not only because it illustrates the value of this examination, but also on account of the rarity of rupture in this situation.

A Case Described.

Male, aged 52, admitted to hospital on July 2nd, 1923, complaining of severe pain in the abdomen, which followed an injury a few hours previously. While riding his bicycle the patient was struck beneath the left costal margin by the shaft of a milk-cart and thrown into the middle of the road. The pain was so severe that he was unable to get up, and while in the ambulance on the way to the hospital he several times vomited a small quantity of blood.

Condition on Admission.—Patient extremely shocked, rather cyanosed in appearance, complaining of great pain in abdomen and of severe thirst. On palpation, whole of upper abdomen rigid. Liver dullness normal on percussion; no evidence of free fluid in abdomen. Temperature 98° F.; pulse 110 and rather feeble. X ray examination of abdomen showed a moderately large translucent area immediately to left side of second lumbar vertebra (see figure), suggestive of a localised pneumo-peritoneum. No other abnormality was seen.

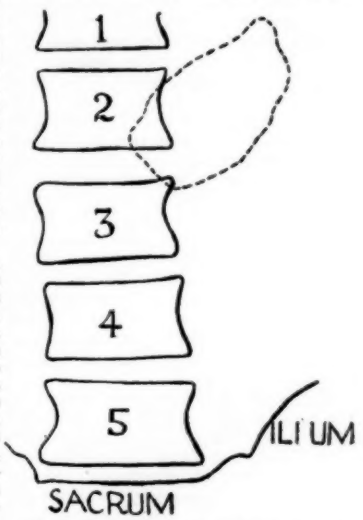

Diagram of X ray plate, showing the relation of the air bubble to the lumbar vertebræ.

Diagnosis.—A diagnosis of rupture of the bowel was made, and on account of the situation of the opacity seen in the radiogram it was thought that the rupture had taken place in the highest part of the jejunum.

Operation.—Operation was undertaken immediately — that is, five hours after the accident. The abdomen was explored through a left paramedian incision, and at first nothing abnormal was noticed. On lifting up the transverse meso-colon, however, a sudden hiss of escaping gas was heard, and on further examination it was seen that the duodeno-jejunal junction was completely divided. A small quantity

of blood surrounded the damaged parts, but there had been no escape of intestinal contents and there was no evidence of peritonitis. The third part of the duodenum had retracted behind the peritoneum, which it was found necessary to incise immediately to the left of the superior mesenteric vessels before removing the everted mucosa. In the jejunum, about an inch distal to the injury, a further rupture was found, involving the intestinal wall for about half its diameter. The first two inches of the jejunum were therefore removed and end-to-end anastomosis performed, not without some difficulty owing to the impossibility of bringing the bowel to the surface. The small quantity of blood above mentioned was removed and the abdomen closed in the usual way without drainage. The patient was returned to bed, and in view of his critical condition, which was considered largely due to shock, 10 oz. of citrated blood were given with marked improvement.

The patient made an uninterrupted recovery, and was discharged 16 days later.

Remarks.

The possibility of X ray diagnosis in intestinal injuries was first pointed out in 1916 by Lenk,[2] who, in several cases of gunshot wounds of the abdomen, observed between the liver and the right side of the diaphragm a crescentic air-bubble, which he found to be associated with injury to the stomach or the colon. This author later called attention to a similar condition on the left side, which sometimes obscured the shadow of the spleen and usually was due to injuries in the vicinity of the splenic flexure. Lenk remarks that the suspicion that these appearances were due to injury of the diaphragm and pleura, at operation proved unfounded.

Dandy[3] had recourse to X ray examination of the abdomen in a case in which the diagnosis was obscure, and succeeded in demonstrating a localised pneumo-peritoneum, which was later found to be due to the perforation of a typhoid ulcer at the lower end of the ileum. In a further case of the same nature, in which perforation of a gastric ulcer was considered a possibility, Kellogg[4] was able to find an air-bubble above the right side of the liver, similar to that described by Lenk, who had previously suggested that in cases of this nature the examination might prove of some value.

These authorities have all pointed out that free gas within the peritoneal cavity rises within the limits of the cavity to which it is confined, and gas arising from injuries in the upper abdomen finds its way to the diaphragm. In injuries of the lower abdomen this may not be the case and the pneumo-peritoneum remains localised. In the case of the upper part of the jejunum it would appear that the transverse meso-colon and the great omentum form an effective barrier to the upward escape of gas, unless this is of large quantity, which is not usually the case. In these cases the gas tends to pass upwards only as far as the attachment of the transverse meso-colon, appearing, as in the case reported above, near the body of the second lumbar vertebra, whither the attention of the observer should be directed.

The diagnosis of traumatic intestinal rupture is notoriously difficult, the onset of symptoms suggesting peritonitis is usually late, and operative interference is in many cases delayed with disastrous results. It is not contended that the X ray examination should replace the judgment of the clinician, but rather that it should be regarded an an adjunct to the diagnosis of a difficult case.

In many cases naturally the necessary apparatus is not at hand, but at the same time, when it is considered that the mortality of intestinal rupture is about 75 per cent. in hospitals and institutions where every means of complete examination is possible, it is evident that every available piece of information is of importance as a potential factor in the reduction of so high a death-rate.

I am much indebted to Mr. R. P. Rowlands for permission to publish this case.

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A CASE OF PROTRACTED DIABETES MELLITUS IN CHILDHOOD ARRESTED BY INSULIN.

BY W. H. PASSMORE, M.R.C.S. ENG.,
AND
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FOLLOWING upon an attack of rubella in March, 1918, this little girl, aged 4 years, developed symptoms of diabetes mellitus—viz., thirst and wasting. In May, 1918, she was examined by Dr. G. F. Still, who found her weight to be 2 st. 3½ lb.; she was thin and pale, and the urine was loaded with sugar. She was put upon a diet, which kept the urine sugar-free, and at the end of four months had put on as much as 7 lb.; her appearance was bright and happy, and a certain quantity of bread and potatoes was able to be

FIG. 1.

Appearance of the patient in October, 1923.

included in the diet. During the next 18 months there was little if any deterioration, but the routine of the urine testing carried out at home became less rigid, and she was found to be very poorly in April, 1920, when the urine was full of sugar and contained acetone. The weight was now 2 st. 9 lb. 10 oz., as compared with 2 st. 10 lb. 12 oz. in September, 1918.

Pre-Insulin Treatment.

As in 1918, one day's "starvation treatment" rendered the urine sugar- and acetone-free, and by ascending the ladder diet in accordance with Allen's dietary, weight for weight, a diet of nearly 1000 calories was reached without the occurrence of glycosuria. No increase of weight having occurred, the child was rather thin, but was quite active and able to run about and go to school. By October, 1920, 1 lb. had been gained and this weight was maintained in spite of an operation performed by Mr. W. G. Sutcliffe, under open ether anæsthesia, for a suppurating tuberculous gland in the neck; this operation led to no kind of complication and the wound healed well.

During 1921 the weight was maintained, but the food tolerance was steadily diminishing and emaciation was becoming progressive. As much rest as possible was given, but she was still able to run about actively.

In February, 1922, however, within 48 hours of the urine having been sugar-free, a condition of semi-coma developed owing to some dietetic error. The child was very drowsy, intensely thirsty, and had dyspnœa with Cheyne-Stokes variation. Saline given per rectum was not retained, but use was made

of the great thirst to give all fluids saturated with bicarbonate of soda, of which a very large quantity was taken. At the end of 12 hours the condition was much improved; brandy was being given, but for a week following the attack no food was given except an occasional egg and raw green vegetables. After a week the urine became alkaline and free from sugar and diacetic acid.

As a result of this illness the condition deteriorated, and by the following April, two months later, the weight had fallen by 3 lb. The condition of the child during the following 12 months became more and more that of an invalid and altogether another 4 lb. were lost. Œdema of the legs and feet came on early in 1922, possibly owing to the intensive treatment with bicarbonate of soda. The face also became slightly œdematous. Emaciation became more and more extreme, and the tendency to bed-sores required constant watching, but fortunately the child was always able to get about gently in the house. Any return of glycosuria as the food tolerance diminished

FIG. 2.

Appearance in February, 1924.

was invariably accompanied by marked acetonuria, so that it was never safe to allow sugar to be passed in the urine for more than a few hours. During this year various forms of pancreatic and hepatic extracts, intestinal antiseptics, raw meat juice, and, externally, olive oil, were used without the slightest effect.

In December, 1922, a pancreatic extract prepared by Dr. Mackenzie Wallis was used for two months, and during this time 1¾ lb. were gained; moreover, the constant association between the glycosuria and the acetonuria was changed, so that the margin of safety as regards life was greater. There was, however, no effect upon carbohydrate tolerance. Early in 1923 the worst complication of all occurred in the form of severe neuralgic pain in the head, radiating from the ears, and being fairly continuous by day and night for nearly two months. At this stage the condition was indeed pitiable, and, had it not been for the hope held out by the researches on insulin at Toronto, perseverance in rigid treatment by diet would perhaps hardly have been justified. By the summer, however, the pains gradually left her, and the condition seemed fairly stable again, when Dr. F. J. Poynton saw her with a view to starting insulin treatment. It was then decided that treatment should be started as soon as the likelihood of extreme heat in London should be over.

Insulin Treatment.

Early in October, 1923, accordingly, the child was taken to University College Hospital. Her appearance at this time is shown in Fig. 1.[1] With regard to it, I can only say that the parts covered by clothing gave a considerably more marked appearance of emaciation; the bones of the pelvis were seen beneath the skin in their skeletal outline; the upper arms were almost unbelievably thin. By this time the calorie value of the diet had fallen to 364 and the weight was 2 st.; in five and a half years, therefore, she had lost 3½ lb.

Insulin treatment was successfully initiated and continued by Dr. Poynton and Dr. K. S. Hetzel in October, 1923: except for a fortnight's slight set-back the gain in weight was steady, and in a short time the calorie value was nearly trebled. When the child returned home just before Christmas 9 lb. had been gained; she was no longer an invalid and the deposit of the new subcutaneous fat was a most remarkable thing to see, particularly round the pelvis and the neck. The treatment has been continued since her return home, 16 units of insulin being given before the first and 8 units before the last meals in the day, these two meals containing the bulk of the carbohydrate. Slight insulin reactions have occurred and have been easily checked with a little barley sugar or milk. During an attack of coryza, glycosuria set in suddenly and was dealt with by lowering the diet and raising the insulin dosage. Fig. 2 shows the general appearance in February, 1924; when the patient is stripped the change is much more remarkable.

On April 25th, 1924, the weight has reached 3 st. 9 lb. 12 oz., and the child goes to school every day. The calorie value of the diet is just on 1000 and she is putting on 1 lb. a week still. It does not seem necessary to do many blood-sugar estimations at the present stage; the last one made showed a fasting blood-sugar of 0·16 per cent., as compared with 0·20 per cent. estimated in University College Hospital. The only unusual thing in the child's appearance is the very large size of the abdomen; this may be due to the uneven way in which the new fat is undoubtedly distributed, or possibly to hypertrophy of the intestines following upon the enormous quantity of cellulose ingested during the past six years.

Broadstairs.

SOME OBSERVATIONS ON ENTERIC FEVER IN THE NATIVES OF THE UGANDA PROTECTORATE.

BY H. LYNDHURST DUKE, O.B.E., M.D., SC.D. CAMB.,

BACTERIOLOGIST, UGANDA PROTECTORATE.

THE following is an attempt to review the evidence bearing on the origin and nature of enteric fever in tropical Africa, and in Uganda in particular. To the investigator whose work lies in a foreign country and among primitive peoples, the first recognition of one of the diseases of Europe in a native subject possesses a peculiar interest. Questions suggest themselves about the biological relation of micro-parasites to their hosts, and we realise afresh the tremendous efficiency of the "lower organisms" in the struggle for existence.

In the present instance a series of cases of typhoid in natives occurred, within a comparatively short space of time, in and around Kampala, the so-called commercial capital of Uganda. A similar small epidemic occurred in Kampala in 1919, but at that time the material from the cases was sent from Kampala to Entebbe, and not dealt with at the bedside; and although the clinical symptoms and agglutination tests proved the disease to be caused by *B. typhosus*, in only one case was the causative bacillus isolated and that post mortem. The cases described here were more fully investigated. The various medical officers in charge of them kindly afforded me the necessary facilities for making a bacteriological diagnosis, and also supplied the clinical notes reproduced below. I

[1] NOTE.—A member of the Editorial Staff of THE LANCET saw this child in October, 1923, when the condition appeared even worse than that shown in the photograph.

personally visited the majority of cases, and took blood and stool-cultures at the bedside. The absence from the available literature—both text-book and periodical—of any account of enteric fever in African natives has prompted this publication.

Enteric in the Tropics.

In the interesting historical survey of enteric fever given in Castellani and Chalmers's "Manual of Tropical Medicine," the first description of the symptoms of the disease now known under this name is ascribed to Spigelius, who wrote in 1864. From this date onwards various medical writers described fevers of similar type; but it was not until the early years of the nineteenth century that the clinical conception of the disease, as we now know it, first took form. *B. typhosus* was first recognised by Eberth in 1880. For a time enteric fever was regarded as essentially a disease of temperate climes, but soon after its recognition as a clinical entity in Europe it was reported from various tropical countries—always, however, as a disease of Europeans. Opinions differ as to the origin of enteric in tropical lands—i.e., as to whether it is indigenous or introduced by foreigners. In the case of the older European settlements it is no longer possible to decide upon this point. Some were founded before the nature of the disease was properly appreciated; in others of later foundation the energies of the few available medical men were fully occupied in combating the formidable array of unfamiliar diseases with which they were confronted; so that mild and atypical cases of enteric may well have been overlooked until facilities for accurate diagnosis improved.

The recognition of enteric in the coloured races of the tropics has, it seems, always been preceded by the detection of the disease in the European population of the area concerned. This order of events is easily intelligible. As a general rule, in the early stages of the invasion of their country natives are slow to avail themselves of the help of European practitioners. Time and experience usually overcome their prejudice; but it is the surgeon rather than the physician who first gains their confidence, inasmuch as his successes are the more rapid and arresting. A disease such as enteric, by the very lassitude which it engenders, will probably be allowed to run its course in the seclusion of the patient's own hut. Again, atypical cases of enteric are notoriously difficult to diagnose without assistance from the laboratory; and it is probable that cases of this kind are not uncommon in native communities, where sanitation is non-existent, and where, in consequence, the people are constantly exposed to contact with fæcal organisms. And so it happens that by the time enteric has been recognised in the native population of a tropical country, it is, as a rule, no longer possible to determine whether the disease existed in that country before the advent of foreigners.

Nowadays, cases of enteric in natives have been reported from practically every country in the tropical zone. To all intents and purposes sanitation does not exist among undisturbed native tribes. It is, therefore, difficult to imagine that a disease whose causal organism is eliminated in human excreta, and largely depends on water, flies, and dust for its propagation, can owe its present wide distribution solely to importation from temperate climes. On the contrary, is it not more probable that enteric has always existed in these tropical lands, and that the inhabitants have, in the course of time, acquired a considerable resistance to the disease—at all events, in its indigenous form? Speaking of enteric, Manson-Bahr, in the seventh edition of Manson's "Tropical Medicine," remarks:—

"It is not unlikely that the relative exemption—if such there be—of the native races is owing to a like immunising effect produced by living in constant contact with typhoid and similar toxic agents, or to an attack in childhood."

Dysentery and diarrhœa are common diseases among the natives of tropical countries. Both the bacillary and the amœbic types have been found, and have a similar geographical distribution. The symptoms of dysentery are sufficiently striking to enable the native easily to recognise this disease, and consequently no doubt the belief exists that dysentery is indigenous to most tropical countries. The symptoms of enteric are less localised, and the disease—especially in its mild or atypical forms—is not likely to hold the attention of the unsophisticated native. It may well be that some of the non-dysenteric diarrhœas so common among native races in the tropics are due to enteric organisms.

Enteric in Natives of Tropical Africa.

We will now proceed to a brief consideration of the distribution of enteric in tropical Africa, concentrating attention finally on the native kingdom of Buganda in the Uganda Protectorate.[1] Standard text-books on tropical medicine afford little or no information on the prevalence and course of the disease in Africans. Cases of enteric in African natives, some of them fatal, have been reported from Zanzibar, Nyasaland, Kenya, Tanganyika Territory, Uganda, Northern and Southern Nigeria, the Gold Coast, and the Sudan in British territory, and also from the French and Belgian possessions. From a perusal of the annual medical reports of these countries the impression is gained that, with better facilities for diagnosing the disease, enteric would be found to be much more prevalent in native populations than is at present acknowledged.

In the annual medical report for Northern Nigeria for 1915 the following passages occur:—

"It is well-nigh certain that it (enteric) was originally imported by Europeans, and that a number of native carriers have consequently developed since. . . The indigenous native seems to be less susceptible to intestinal disease than is the average European, and this probably explains why native outbreaks have not attended every European case" (of enteric).

In the same series, the report for 1917 contains the following references to enteric:—

"West African natives constitute a particularly dangerous type of dysenteric and enteric carrier; they are themselves so tolerant of abdominal affections that they not infrequently can carry on easily whilst in a condition which would inevitably prostrate any European."

Dr. C. J. Wilson, acting deputy principal medical officer, Kenya Colony, has kindly supplied me with the figures for enteric for that colony for 1922. The total reported is 38, comprising Europeans 24, and natives 14; native deaths, 2. He remarks:—

"Of the 14 native cases, 12 were reported from the native hospital, Nairobi. This, to my mind, indicates that enteric may be much more prevalent amongst natives than the figure of 14 for the year would suggest, for accurate diagnosis of a doubtful case is more likely to be made at Nairobi than elsewhere; at other stations cases might easily be overlooked. In my own experience with native carriers during the war, in one month of 1915 I discovered six cases of enteric fever post mortem, not one of which would have been suspected from clinical observation."

From these reports it is evident that enteric occurs in natives in various parts of tropical Africa, and that local medical opinion credits the native with greater powers of resistance than Europeans possess. The mortality of the disease in natives is, however, fairly high—probably owing to the fact that only severe cases are recognised.

Enteric in the Kingdom of Buganda.

Arrival of Foreigners in Buganda.—At the moment of writing the Protectorate of Uganda consists of five provinces, one of which, the Buganda Province, is coterminous with the ancient native kingdom of Buganda. For centuries before the advent of Europeans into the interior of Africa, Buganda was the seat of a civilisation far superior to that of surrounding countries. The social and military organisation of the people was astonishingly complex and efficient, and under a long line of despots the country had for ages dominated its neighbours and maintained complete independence. Hundreds of miles of wild Africa, untraversed by any navigable

[1] Various prefixes to the root "*-ganda*": *Lu-*, *Bu-*, *Mu-*, *Ba-*, &c., denote, respectively, the language, the country, a native and natives of the kingdom of Buganda. *Uganda* is, strictly speaking, the Swahili equivalent of *Buganda*, but has become synonymous with the Protectorate as a whole.

waterway, lay between Buganda and nearest sea-coast. To the north, across the present Nile route to the sea, lay the hostile kindred race of the Banyoro, whose tribal organisation was almost as powerful as that of the Baganda themselves. To the west lay the Congo with its huge forests and cannibal tribes—an efficient barrier against encroachment from the West Coast. Owing to the geographical isolation and the difficulties of approach, it was not until 1845 that the Arabs, who had been gradually working inland from the East Coast, arrived in Uganda from the south-west. Speke, the first European to reach Buganda, arrived at King Mutesa's court near Kampala in 1862, stayed for six months, and departed home via the Sudan. Baker entered Bunyoro in 1864, and again in 1872; he did not reach Buganda proper. Stanley visited Mutesa in 1875. The first missionaries—three in number—reached the country in 1877, by which date the Arab traders had considerably increased in numbers. The first Indians to reach Buganda arrived in a small detachment during the 1897–98 rebellion, a strong body of Indian troops following later in 1898.

The above is a brief sketch of the invasion of Buganda by Arabs, Europeans, and Asiatics. These newcomers may have introduced diseases foreign to the country, but it must be remembered that none but the strongest could survive the trying ordeal of the long march up from the coast. There is, of course, the possibility that there were "enteric carriers" among these foreigners or their dependents. On this point nothing definite can be said. The only relevant comment that suggests itself is that such a carrier would have constituted a grave menace to his travel-companions during the 700-mile journey from the coast, and under the necessarily primitive living conditions imposed on the newly-arrived missionaries at the Buganda capital. Under such circumstances the absence of evidence that the pioneers suffered from any epidemic disease suggestive of typhoid has, perhaps, some slight bearing on the issue before us. All this is, of course, pure speculation, but so also is the introduction theory.

Recognition of the Disease in Buganda.—From these early days up till the arrival of Dr. A. R. Cook in 1897 no great expansion occurred in the foreign occupation of Buganda. Hardly any information is recorded about the diseases of the country during this period. Dr. Cook started work immediately on arrival, and very soon the nucleus of the now famous C.M.S. hospital system was established at the capital. From the outset careful records have been kept. Dr. Cook, with unfailing readiness and kindness, has sent a brief note on the earliest recognition of enteric in Buganda. He writes as follows:—

"The existence of enteric fever was long denied in Uganda by some of the very few medical writers practising there in the late 'nineties and the early years of this century. Careful in-patient records have been kept at the C.M.S. Hospital, Kampala, since June, 1897, but in those pioneer days, when the railway had only advanced a few miles from the coast and it meant a three months *safari* to reach Uganda equipment had to be cut down to the utmost limits. Obstacles were constantly thrown in our way over the conduct of post-mortem examinations. Though begged for almost on bended knees from the relatives, and the advantages to the living constantly pointed out, they could but rarely be done, and then, as it were by stealth, some five post-mortems only were performed in the first three years. Enteric fever was again and again suspected in natives—e.g., one man died from a perforating ulcer of the intestine, another from hæmorrhage from the bowels; many showed clinical signs of the disease, but it was not till 1901 that a fortunately-obtained post-mortem in a native showed perfectly typical typhoid ulcers in the small bowel. The specimen was kept in spirit and shown to unbelievers for some years. When Colonel (now Sir) David Bruce came to the country in 1903 on the Sleeping Sickness Commission he confirmed the opinion that the ulcers were genuine typhoid ulcers.

In the practice of this hospital cases have always been rare; there has never been a general epidemic. As examples of clinical typhoid the following may be cited. I attended Mrs. L (European) in March, 1900, while on *safari* to Toro, a journey which then took a fortnight. She was attacked by a continued fever, lasting rather over three weeks. She showed rose spots, and miscarried after a fortnight. She had a relapse accompanied by pneumonia, and all but died—her husband starting in to make her coffin. She is still alive and well. . . . I was in close attendance on this unfortunate lady, and, a fortnight after leaving her, started a severe attack of what I took to be enteric. I had continued fever for six weeks with 'tender toes,' quite uninfluenced by quinine up to 55 gr. per diem, and complicated by phlebitis."

From the above it is plain that the disease was sufficiently prevalent in Buganda in 1897 to attract the notice of the first expert who came into close professional contact with the natives.

At the present day the Baganda have no special name for enteric fever in its typical form. The enteric syndrome is covered by the term "omusuja" (fever), the local equivalent of "P.U.O." In the list of diseases that are recognised by the Baganda themselves, though not specifically named by them, there are certain more or less prolonged fevers, accompanied by headache, lip sordes, and dirty tongue, that are usually followed by recovery. Probably some, at any rate, of these fevers are due to enteric organisms. As already mentioned, the conditions in native villages appear at first glance to be most favourable to the spread of this disease. Although the Baganda are relatively clean in their habits, washing their hands before and after eating, and taking care about the cooking of their food, yet they are ignorant of the very rudiments of modern sanitation and hygiene. The water they drink is usually opaque, and is never boiled. The vast majority of the village sources of supply are unprotected surface springs, or holes dug indiscriminately in swamps. The sun is, no doubt, a valuable ally. Springs which even a layman would condemn after the most casual inspection of the vicinity yield water the bacteriological content of which is considerably lower than would be expected from a similar source in temperate climes. There are, however, limits even to the sun's powers; and, on general grounds, one would expect that a race living under such conditions would possess a high degree of resistance to fæcal organisms of all kinds, whether introduced through the skin as in wounds or by the mouth.

In one respect the Baganda have benefited by the geographical isolation of their country. The advance of the foreigner has been slow and on a relatively small scale. There has been no great upheaval in the mode of life of the native, and the changes that have occurred are limited to the vicinity of one or two of the larger settlements. The European community is still small, and the tenor of native life continues in the main on the old-fashioned lines. Carbohydrates bulk largely in the national dietary of the Baganda, and this may to some extent check the dissemination of *B. typhosus* by the fæcal route (Torrey). The so-called towns in Uganda have not developed true "native quarters." There is still plenty of room to move in the Protectorate, and the native keeps, to a great extent, to his villages and retains his old habits.

In this connexion it is significant that where natives are taken from their normal surroundings and crowded together, even though under strict supervision, typical enteric is liable to appear.

Observations.

Of 11 cases of enteric in natives of the Uganda Protectorate occurring at Kampala between June and November, 1923, 2 died (a mortality of 18 per cent.). Their case-histories show that the natives of the Protectorate are liable to attacks of a typical enteric fever. Both deaths were of prisoners in gaol; both men had malaria. Dr. Wilson's experience, quoted above, of fatal cases in British East Africa, related to native porters during the war. In each instance the individuals affected were leading an abnormal existence, under conditions inevitably more or less unfavourable. In the Kampala epidemic of 1919 most, if not all, the cases originated in the gaol.

No doubt a variety of factors combine in determining these outbreaks. The gaol population comprises natives of different races, habits, and constitutions, and weak and strong are in close daily contact; the gaol is dependent on roof or spring water, and it is

exceedingly difficult to guard against dust contamination. However well organised and supervised, prison life is prone to exert a depressing effect on the general vitality, and natives are very susceptible to psychical influences and changes in environment. The presence of "carriers" is difficult to detect, and the power for evil of a "carrier" under such conditions is very great. On the first recognition of enteric in the gaol this year the sera and stools of the seven native cooks were examined for evidence of typhoid infection. Two gave complete agglutination in 1/50, and one of these ++ in 1/100 with *B. typhosus*; none of the stools yielded the bacillus. Under the circumstances the wonder is not that occasional cases of enteric occur, but that the disease and its congeners are so rare.

No cases of enteric in Europeans have been reported from Kampala during the last few years. Cases occur at rare intervals in up-country stations, indicating a wide distribution of the disease within the Protectorate. The rarity in Europeans is to be explained by the fact that the community is small, that there is still plenty of space, and that the sanitary organisation, though simple, is efficient.

It is at present impossible to pronounce on the prevalence of the disease in natives of the Protectorate. Much investigation is needed, and time and staff are limited. Up to the time of writing, sera from 246 natives attending Mulago Hospital for venereal disease have been tested by the macroscopic method for agglutination against *B. typhosus* and the paratyphoids A and B, the dilutions used being 1/50 and 1/100. Agglutination occurred in three instances, in each case complete in 1/50 and + 1/100, with *B. typhosus*. Sera from 26 other natives, patients in the Kampala hospitals suffering from undiagnosed fevers, gave no agglutination with the enteric organisms. The great majority of these sera came from adult persons of both sexes. According to the views put forward above, in an investigation of this kind special attention should be paid to children and young people, and these are particularly inaccessible. We may conclude from the evidence before us that enteric fever in its typical form is uncommon in Uganda. This is, also, the considered opinion of Dr. Cook, and his opinion carries the weight of 26 years' experience of the ailments of all classes in the Protectorate.

The evidence suggests that enteric organisms exist in the native population of the country, but that, under normal conditions of life, the balance between the organisms and their native hosts is well adjusted. Alterations in environment—particularly changes in diet, crowding, and close contact with strangers (white or coloured)—may disturb this equilibrium, and the organism may then assert itself in its classical European form.

Unfortunately the evidence bearing on the origin of enteric fever in Buganda is inconclusive. Dr. Cook recognised the disease before it was suspected by his colleagues of those early days of medical-missionary enterprise; and it is interesting that his diagnosis was based on symptoms observed in native Africans, and not in European patients. The usual order of discovery is thus reversed.

But we are not much nearer the solution of either the general or the local problem. The balance of probability seems to be in favour of certain assumptions—namely, that enteric is a disease indigenous to tropical countries; that the newly arrived European, being racially less inured to dirt (in the broadest sense of the word) than are his less squeamish coloured brethren, and handicapped also by an unfavourable environment, is particularly susceptible; and that the natives of a tropical country possess a relatively considerable resistance, under the conditions of life normal to that country.

My thanks are due to Dr. J. H. Reford, Principal Medical Officer, Uganda Protectorate, for permission to publish these notes; also to Dr. W. L. Webb, Superintendent of Mulago Native Hospital, for his kindness in allowing me access to the material in that establishment.

Clinical and Laboratory Notes.

MYELOMA OF THE UPPER ALVEOLUS IN A CHILD.

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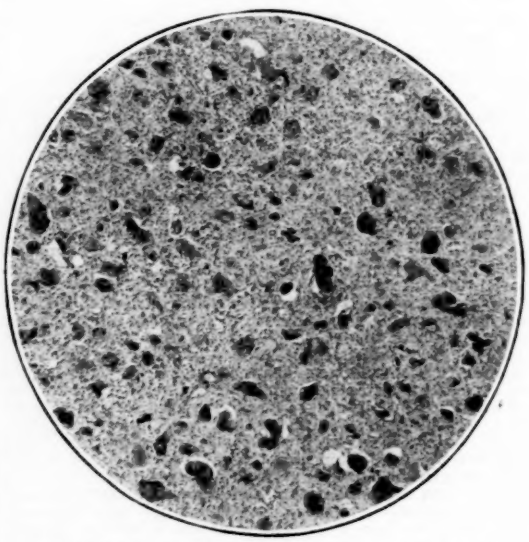
THE following case is recorded as the condition seldom occurs at an early age.

Early in July, 1922, a boy, aged 5½, was brought to hospital complaining of a sore place on his upper jaw under the lip.

Appearance of myeloma.

His mother gave the following history: On May 24th, 1922, he fell against a wall, knocked out the middle right incisor tooth of the upper jaw, and chipped his left middle incisor. The injured gum gave no trouble and was believed to have healed. But it was noticed later that the site of the lost



Section of myeloma showing giant cells and fusiform cells.

tooth was becoming filled with a dark red substance. This grew until it became uncomfortable from its size. It was painless and did not bleed. In place of the right middle incisor a flat circular plum-coloured growth was to be seen extending by its edge on the left to cover half the remaining middle incisor on the right, overlapping the laferal incisor, and above, one-eighth of an inch higher than the edge of the gum. It has a circular base, limited by the gap between the teeth. The edge overlapped the base all round, and was

smooth, regular, and firm. It was covered with a film of tenacious slime. The centre was probed, but no portion of dead tooth was felt. An X ray showed healthy bone and unerupted permanent teeth. The appearance is shown in Fig. 1.

Operation.—The growth was excised under general anæsthesia. The mucous membrane was incised close to the base of the growth and the base divided. There was some free arterial bleeding, which was stopped with a suture. The wound healed rapidly and left a firm gum, without scar or irregularity.

The section (Fig. 2) shows giant cells and fusiform cells seen in myeloma. It is interesting to notice here that a cure was produced without interference with the bone; a scalpel only was used to remove the growth.

This type of tumour is well known to occur in the jaws, both within the bone and outside it, but at this age it is uncommon. This one doubtless arose from the soft tissue covering the bone or dental membrane. The boy had no congenital deformity of the face or irregularity of the milk teeth. The growth contained no other type of tissue, save that shown in the section. The tumour reached the size which Fig. 1 indicates, as far as can be known, between May 24th and July 21st, 1922. It had no capsular covering on the surface, yet preserved a button-like shape with a smooth edge. An infected wound seems in this case to be connected with the origin of the disease.

FOUR CASES OF HERPES ZOSTER.

BY H. A. COOKSON, M.B., F.R.C.S. EDIN., D.P.H.

(From the Pathological and Bacteriological Departments, Royal Infirmary, Sunderland.)

THE following cases of herpes zoster are of interest in relation to their occurrence, and tend to support the theory that this disease is really an infective poliomyelitis posterior acuta.

In group A there were three cases, brief notes of which are below.

CASE 1.—Dr. X., aged 34½ years, had a typical attack of intercostal herpes zoster, with neuralgic pains. He had had chicken-pox.

CASE 2.—Mr. Z., aged 30 years, had severe intercostal neuralgic pains (13 days after Dr. X.), with a scanty eruption, not so closely limited to the intercostal nerve involved as in Dr. X.'s case. Mr. Z. had had chicken-pox in childhood.

CASE 3.—Dr. Y., aged 38 years, developed herpes zoster 14 days after Mr. Z. The intercostal neuralgia was fairly severe, and the eruption, although less marked than in the case of Dr. X., was more marked than in that of Mr. Z. There were also one or two vesicles in other parts of the body and the neuralgic pains continued a considerable time afterwards. Dr. Y. had had chicken-pox as a boy. He also had a leucocytosis of lymphocytic type.

The persons concerned in this small outbreak were all in fairly close contact at their work daily, and it appears that they infected each other. At the same time there was a fair amount of chicken-pox in the district in which they lived, the outbreak of chicken-pox being at its height when these herpes cases occurred. It will be noted that all the persons in Group A had had chicken-pox previously.

In Group B there was one case.

CASE 4.—Dr. L., aged 58, 14 days after seeing a patient with herpes zoster, contracted the disease in the supra-orbital region. He was severely attacked with great pain and a considerable eruption, the neuralgic pains persisting. He had had a previous attack of herpes zoster 20 years before.

These cases, unfortunately rather scantily observed, are very suggestive of herpes zoster being an infective disease, on the lines of poliomyelitis anterior acuta—the incubation period being possibly 14 days. Apparently the chances are that chicken-pox had no relation to the attacks; and it is noteworthy that in the case in Group B immunity from the disease did not remain permanent.

Medical Societies.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society was held in the rooms of the Medical Society of London on April 25th, the chair being taken by Mr. DENNIS VINRACE.

Neuro-recurrence after Arsenobenzol.

Mr. E. R. T. CLARKSON, the hon. secretary, said that out of 34 replies to the questionnaire addressed to medical officers of military hospitals concerning cases of neuro-recurrence following the administration of arsenobenzol only one such case was reported, and that was in a private patient. One well-known syphilologist, however, had written in a general way, without giving any cases, contending that there had been an increase in nerve syphilis following the newer methods.

Bismuth Therapy in the Treatment of Syphilis.

Major A. T. FROST, R.A.M.C., opened a discussion on this subject. He said that in 1921 Sazerac and Levaditi reported the result of treating five cases of syphilis by means of tartaro-bismuthate of potassium and sodium, and since then much work had been done on the subject. In this country, so far, little desire had been shown to desert the arsenical compounds for the newer preparations, and rightly so. Among the preparations on the market it was difficult to choose the one which combined an efficient dose in reasonable bulk which was painless, did not encyst in the tissues, and was absorbed into the general circulation at the right pace. The tartaro-bismuthate of sodium and potassium was too painful for general use, and the substance which became popular owing to absence of pain and induration, the iodo-bismuthate of quinine, had too small a bismuth content, varying from 24 to 50 per cent. of metal. The simple salts of bismuth, such as the hydrate and the chloride, contained 80 to 90 per cent. of the metal. The oxychloride could be given without causing pain when properly made, and 2 c.cm. of it bore a sufficient dose. Major Frost thought it would be better if the dosage could be got into 1 c.cm. Its absorption was even and not too quick or too slow. There were many trade preparations of the metal in a finely-divided state, and the highest percentage of bismuth in them was 97. Some said these were painless, others that they had had to stop the injections because of pain and indurations. He had himself received complaints of pain five or six days after the injection, and of a painful node at the injection site. If, however, the injection passed directly into the muscle sheath, and the skin was pinched as the needle was withdrawn and held for a short time, no complaint was made. He did not think the healing activity of the best bismuth preparation was likely to be greater than that of the arsenobenzol group. He urged that there should be an abandonment of the present haphazard methods of preparation, and the adoption of a standard based on definite physiological and chemical laws. With bismuth in liquid suspension it was too dangerous, in clinics, to take a dose from a bottle when accuracy depended on the vigour of agitation of the bulk while the dose was being withdrawn. With a semi-solid suspension this difficulty was not so pronounced as with mercurial cream, as the bismuth was unaffected by overheating, and most of the salts were sterilised at 120° C.

Bismuth was slow in healing up the active signs of disease in comparison with arsenic, and that fact militated against its use in venereal clinics except as an adjuvant. The most which could be claimed for the drug in the early stage of primary syphilis was that an originally negative Wassermann reaction did not become positive during the course. It was of great use in relieving painful symptoms in the late

nervous stages. In one of his own cases which had shown no improvement under arsenic the man began to lose his pains after four injections of bismuth, and in a fortnight resumed his ordinary work. After one or two doses bismuth could be recovered from the cerebro-spinal fluid, hence it was reasonable to regard it, when combined with arsenic, as an important protector of the central nervous system against attack by the *Spironema pallidum*. He had not yet seen a case which could not take bismuth. Some patients developed albuminuria early in the treatment, but it cleared up after 14 days' cessation and did not return on resuming the treatment. He had seen only one case with definite inflammation of the gums, though most of the cases showed a black line on the dental edge of the gums all through the course of combined arsenical and bismuth treatment. Cases intolerant to arsenic he had continued to treat with bismuth, and without untoward effect, but without a positive blood test becoming negative, and he asked whether, in such cases, a more intensive bismuth course should be given. So far he had not exceeded 9·2 g. of the metal weekly. His method during the past year had been to give a first series of seven injections of stabilarsan and seven injections of bismuth in 57 days, repeated after an interval of a month, and 14 days of potassium iodide just before the second series. At present he did not think one could go further than to state that bismuth therapy was superior to mercury therapy for primary, secondary, and tertiary lesions of syphilis when either was combined with arsenobenzol. He did not think "bismuth-fastness" was likely to occur. The fact that bismuth was ten times more toxic by the veins than when given by the intramuscular or the subcutaneous route was a drawback. As a safety test he first plunged the needle into the injection site, then if no blood came from the needle butt he attached the syringe and applied negative pressure by pulling on the piston while the hand holding the syringe was fixed against the buttocks. Colloidal bismuth was probably highly active for a short time in the blood-stream, but it soon became inert as a colloid and then merely acted as a minute amount of metallic bismuth in the body. There were, the speaker concluded, three metals in the lists in the fight against syphilis, of which the latest had made a bid for second place. It had been suggested to him that cadmium might be useful in the same connexion. The more drugs of high curative and high sterilising power there were available the better, for then the clinician had more scope in cases in which individuals showed intolerance to any one drug.

Discussion.

Colonel E. T. BURKE said that the preparations he preferred were neuthanol, iodo-bismuthate of quinine, biquinil, and luatol. No stomatitis, nephritis, nor any injection lesion occurred after them, in his experience. He agreed that bismuth displaced mercury as an antisyphilitic. His present practice was to alternate bismuth with stabilarsan, discarding mercury. He did not think arsenic should yet be discarded in favour of bismuth. Arsenic and bismuth should not be given concurrently, but in alternative courses. During the last 18 months he had treated 23 cases which were apparently drug-fast to arsenic and mercury, for the Wassermann remained positive. He treated them with iodo-bismuthate of quinine, and 12 of them now gave a negative Wassermann, though in two the cerebro-spinal fluid remained positive to that test. The great value of bismuth lay in its efficacy for cases which proved to be absolutely intolerant of arsenic.

Captain C. DOBLE expressed his agreement with Major Frost concerning cases which had persistently given a positive Wassermann under ordinary treatment becoming negative under bismuth. He related some cases in which under treatment with arsenic compounds the Wassermann remained positive many months, but quickly changed to a negative response under bismuth. There was an objection among makers to putting up the bismuth preparations in greater quantities than 1 oz. ampoules because of the results of the entry of air each time the vessel was opened and the danger of the metal sinking to the bottom. He thought this objection was fully justified.

Dr. HERSCHELL said he began to use bismuth 18 months ago, the neotrepol preparation, which contained 96 per cent. of the metal. He had, however, abandoned it for mercury because it caused so much stomatitis, probably largely because most of the mouths of his patients, mostly Hindoos and Chinese, were very dirty. He agreed, however, that bismuth had a quicker and more certain effect in rendering a positive Wassermann negative. He asked how bismuth could be used for a case of tabes without causing stomatitis.

Mr. WANSEY BAYLY said his use of bismuth had been limited to neotrepol. In a year he had experienced no difficulty in regard to stomatitis. At present he was treating a case of tabes with it, and was pleased with the result, for the plantar reflex had returned, and the patient no longer had the feeling of walking on a soft carpet; in addition, the areas of anæsthesia and hyperæsthesia in the legs had vanished. He had not tried bismuth alone for early cases of primary or secondary syphilis. Bismuth was well worth trying.

Dr. A. M. H. GRAY said his experience with bismuth preparations was somewhat limited. He found that the ordinary out-patient would not stand the large doses which some people recommended. Most mouths would not tolerate more than 2 c.cm. of neotrepol in ten injections. In one or two cases severe stomatitis compelled a cessation of the treatment. Cases in which N.A.B. or stabilarsan was interspersed with salvarsan showed improved results in comparison with those in which mercurial treatment was used in alternation. He quoted a case which was very intolerant to both arsenic and bismuth, but who had no toxic symptoms and was greatly improved on luatol.

Dr. MARGARET RORKE said patients complained definitely of pain after neotrepol. During the last six months she had used quinine iodo-bismuthate, and it gave very good results. In conceptional syphilis of old standing in women she found alternations of bismuth with arsenic very useful in lessening the danger of arsenical poisoning at those times.

Major DE M. PEYTON said naval medical authorities found that in a number of cases of active primary and secondary syphilis treated by bismuth preparations alone not only did not the positive Wassermann become negative, but secondary signs of the disease supervened in spite of intensive bismuth treatment. But in some cases treated with arsenical preparations in which arsenical complications occurred, the resort to bismuth was extraordinarily successful. At St. Thomas's clinic much disappointment was felt at the lack of destruction of the spirochætes in active syphilis by bismuth; but they had formed a high opinion of luatol, which he regarded as an excellent antisyphilitic remedy. But the pain it caused had forced its abandonment. Entry of air into the bottle containing the preparations could be prevented by using rubber-capped bottles. Bottles of 25 c.cm. capacity were used. The bottle was inverted and the contents kept in a state of agitation while the syringe was receiving its supply, and the rubber cap immediately sealed the neck when the supply had been withdrawn.

Major FROST, in reply, said some organic salts seemed to be more effective than others. Perhaps he did not meet with much stomatitis because soldiers were so carefully nursed and looked after in regard to their teeth and mouths. The presence of the black line along the teeth margins was not an indication for stopping the treatment. He felt that bismuth, arsenic, and mercury were three drugs which depended for their action on their conjunction with some substance in the body, and the complemental substance to one of them might be missing in some patients, for whom, therefore, one of the other three metals would be efficacious.

An Interesting Case.

Major PEYTON showed a case of Chronic Non-progressive Anterior Poliomyelitis of Specific Origin. The patient, a man aged 57, contracted syphilis

35 years ago, and his treatment consisted of a 90 days' course of mercury pills. Eleven years ago there was a decrease of muscular power, with some wasting in the arms and legs. In 1916 he had three injections of "606," after which his walking improved. Three years later he again had three injections of "606," but no subsequent treatment of any kind. The condition was apparently stationary until a year ago, when he had occipital headaches and experienced a warm patch between the scapulæ, and he has now lost all power in both thumbs. Deep reflexes are exaggerated, the plantar response is flexor, but sensation is normal and there is no sphincter disturbance.

DERBY MEDICAL SOCIETY.

A MEETING of this Society was held on April 10th, Mr. J. E. KILVERT, the President, in the chair, when a paper was read by Dr. JOHN A. WATT on

Intrathoracic Tuberculosis in Children.

Dr. Watt said it was now generally accepted that tuberculosis in adults developed from an infection in childhood, and that all efforts at prevention should begin in early years. Investigations by the Royal Commission and others showed that human tubercle bacilli were almost constantly present in pulmonary and bronchial gland tuberculosis, indicating that infection occurred from human sources. The clinical features of intrathoracic tuberculosis were dealt with in three main forms—viz., (1) general or infantile, (2) hilum or juvenile, (3) adult types. Tuberculosis in infancy showed a strong tendency to generalisation and was most fatal at this age. The bronchial glands were invariably involved and were usually the chief centres of the disease. Progressive caseation occurred, then dissemination, and miliary tuberculosis or meningitis was the termination. The typical form in infants was acute miliary tuberculosis; other varieties were tuberculous bronchitis and caseous pneumonia. When school age began the disease passed into more latent and chronic forms with a low death-rate. The common form was a benign and latent glandular infection contracted in infancy. The primary lung focus gave rise to secondary infection of the thoracic glands, but the disease might spread out into the parenchyma of the lungs. This condition was known as hilus tuberculosis, and by the French as "glandulo-pulmonaire." The physical signs of hilus disease were discussed and most importance was attached to para-vertebral dullness, altered breath sounds, and D'Espine's whisper sign. Radiography was invaluable, and the presence of tubercle bacilli clinched the diagnosis. A case of open tuberculosis in a household had a sinister influence on young life. Investigations showed that in such nearly all infants were infected in the first four years of life. Hilus tuberculosis was usually a mild disease and nearly all cases recovered. It might smoulder on for years often unrecognised, and there was weighty evidence accumulating that hilus tuberculosis in children might develop at adolescence into the adult type as we knew it. Adult types, apical, basal, or lobar, were not common before the age of 12 but increasingly frequent afterwards. They were easily diagnosed, tubercle bacilli were usually present, and a radiograph showed the extent of the disease.

Dr. Watt tabulated 165 cases of intrathoracic tuberculosis admitted to the County Sanatorium during the last four years. There were 117 cases of hilus tuberculosis with one death, and 48 cases of adult forms with 18 deaths after an average period of three years. Fifty per cent. of the hilus cases had tubercle bacilli present and nearly 80 per cent. of the adult cases, examination being made by the Ellerman-Erlandsen method. Lantern slides were shown of radiographs illustrating the main types.

A discussion followed, in which there took part Drs. S. BARWISE, NIVEN ROBERTSON, H. BARBER, M. PARRY-JONES, F. G. LESCHER, and P. HEFFERNAN.

Reviews and Notices of Books.

MEDICINE, MAGIC, AND RELIGION.

By W. H. R. RIVERS, M.D., D.Sc., F.R.S. Preface by G. ELLIOT SMITH, F.R.S. London: Kegan Paul, Trench, Trübner and Co., Ltd.; New York: Harcourt Brace and Co., Inc. 1924. Pp. 147. 10*s.* 6*d.*

How great was the loss sustained by psychological medicine through the untimely death of Prof. Rivers is proved by the publication in book form of his FitzPatrick Lectures by the International Library of Psychology, Philosophy, and Scientific Method. The lectures were delivered before the Royal College of Physicians of London in 1915–16, and were reported in full in THE LANCET, where they were seen to display in a simple manner the intimate relations between primitive medicine and magic and religion. The author takes the widest possible survey of the ways and thoughts of primitive medicine-men, and while in many places the deductions are distinctly original, the copious references to other authorities show how well Prof. Rivers was documented. Nowhere is the volume padded out by quotations; for example, he does not consider the kind of magic usually known as sympathetic magic in any detail at all, but refers the reader to the magic art of Sir James Fraser and his own great monograph on the history of Melanesian Society. The work of A. B. Ellis, E. im Thurn, C. G. Seligman, and J. Roscoe comes in for similar allusive treatment.

Prof. Elliot Smith points out that in the last years of Rivers's life his views were undergoing a change in the direction of a fuller recognition of the part played by the diffusion of culture in the development of custom and belief. The first two chapters of the book, which represent the first two lectures, were written after Rivers's valuable work at the Maghull Military Hospital, where for a considerable period he investigated the mental effects on soldiers of trench warfare. He then found a remarkable analogy between the methods employed in the hospital for the diagnosis of psychical disabilities and those which he had used himself in Melanesia when investigating the social and religious practices of primitive peoples; and in the second chapter the section treating of the attribution of disease to infraction of taboo, quoted from a book by Mr. A. M. Hocart and himself recording their studies in Mandegusu, indicate how keenly Rivers was interested in the effects of cultural diffusion upon the psychology of races. The last chapter of the book, entitled "Mind and Medicine," considers at length an important principle of psychological medicine—namely, psychical determinism—and contains the author's views of the work of Freud, of whom he says that more than any other investigator he has emphasised the mental factor in disease. The early relationships between man and medicine are shown in this chapter to be bound up with the process by which medicine grew out of magic and religion. This closing essay formed the subject of an address delivered in 1919 at the John Rylands Library in Manchester, and makes a valuable round-off of the whole subject, indicating well Rivers's own development of outlook.

SURGICAL EMERGENCIES.

By RUSSELL HOWARD, C.B.E., M.S., F.R.C.S. Eng., Surgeon, London Hospital; Senior Surgeon, Poplar Hospital. London: Edward Arnold and Co. 1924. Pp. 216. 7*s.* 6*d.*

"Emergency surgery has therefore become decentralised and the general practitioner . . . is now called upon to perform operations which a short time ago were in the hands of the surgeons of the great hospitals." The truth of this statement in the author's preface cannot be denied, though we may disagree with the reasons he assigns therefor. If operative treatment at local small hospitals is to be of a high

standard, then the presentation in concise form of usually accepted methods of diagnosis and treatment is urgently needed. Since such a handbook as this is designed to reach men in country practice who have little if any time to check the truth or soundness of what they read by wide visual experience of other methods, it is more than ever essential that the methods of diagnosis and the choice of operative procedures should be above reproach.

We sympathise with the motives which prompted Mr. Howard to write this book, but confess to disappointment with some of its contents. The book contains a very great deal that is admirable in every way—e.g., the chapters on abdominal injuries, head injuries, and the urethra are full of sound advice. But other sections are less satisfactory. In dealing with blood transfusion, there occurs the sentence: "In cases of emergency, however, the risk of producing intravenous clotting may be taken" (p. 13). When the testing of blood groups (not explained in the text) is so simple a matter, it must border on culpable negligence to give a blood transfusion if the groups of donor and recipient are not known. Again, in discussing acute osteomyelitis, Mr. Howard says: "The physical signs are a deep-seated brawny swelling near a joint." He does go on to say that the diagnosis may be made by a point of exquisite tenderness; but the whole aim and object of the surgeon should be to diagnose the case long before swelling occurs, for the prognosis in such neglected cases is appalling. In the treatment of this condition the author still scrapes out the marrow and with it the endosteum with a sharp spoon, and to complete matters swabs the cavity with pure carbolic. The lesson taught by Nichols in Vol. II. of Keen's Surgery has evidently not yet been accepted by him. On p. 41, where the cardinal symptoms of acute intestinal obstruction are enumerated, pain is not mentioned, though on p. 65 it is just discussed. Persistent vomiting is stressed as a most important symptom; but in large intestine obstruction vomiting does not come on for at least 48 hours, and the diagnosis by enema results is now recognised as unreliable. These two conditions—acute osteomyelitis and acute obstruction—have been singled out for criticism because the patient's chances of recovery depend to so small a degree on the technical skill of the surgeon's carpentry, and almost entirely on his skill as a diagnostician, and the advice concerning the diagnosis of these conditions seems rather to perpetuate old fallacies than to offer the lessons of modern practice.

The serious need for the better education of the operating general practitioner in the country is undoubted, and books of this type should exert a widespread influence—for Mr. Howard's is a good book, though we have considered it right to make certain criticisms. For it is even more important that the advice given here should be up to date than in text-books for the surgeon-consultant, who has ample opportunities of discussing technique with his fellows. In many respects, as we have noted, Mr. Howard's book is an excellent guide, and will doubtless be of real service to surgeons in general practice.

HEALTH BUILDING AND LIFE EXTENSION.

A Discussion of the Means by which the Health Span, the Work Span, and the Life Span of Man can be Extended. By EUGENE L. FISK, M.D., Medical Director, Life Extension Institute of New York. New York: Macmillan Company. 1923. Pp. 521. 16*s*.

THE work of the Life Extension Institute of New York is becoming increasingly appreciated by medical men; and this volume attempts a philosophical review of the factors of individual hygiene, of industrial hygiene, and of public health, in their relative importance, and of the possibilities of measures for reducing the tax of sickness on life. The scheme of the book is clear. Part I. deals with the physical state and the extent of disabling sickness, the possibility of reducing this, and of extending the cycles of life, of health, and of work, and the value of periodic examinations and health supervision. Part II., whose contents fall under the general heading of industrial health and working capacity, gives a review of poisons, of food deficiency and excess, psychical influences, and, indeed, of nearly all the known enemies to health; while in Part III., federal, state, community, and industrial health organisations are outlined and a special chapter is devoted to "drives" against individual diseases.

The volume contains a vast mass of information, clearly stated, and most useful and stimulating to the reader who can distinguish between facts of small and of great importance, and between inferences of greater and less degrees of probability: no physician or medical officer of health can read it without receiving useful stimuli to a wider outlook on the problems of his professional life. In the earlier part of the book there is an elaborate statistical discussion of the increasing mortality in the United States at higher adult ages, and on the increasing mortality from some degenerative diseases, the statistical basis of which is not above suspicion. But the main fact remains that such diseases are excessive, and might be decreased; though it may be doubted whether experimental results with animal tissues justify the "philosophical validity of the postulate that human life may be indefinitely extended." The illustrations of possible savings from periodic examination and health supervision in university life are striking, and it is certain that increasing use of this means of diminishing sickness is advisable; but examination and supervision in adult life do not cover the major problems, for, as is urged by Sir A. Newsholme in his Harveian Lecture (January, 1921), "the chief and most promising line of attack on the disabling diseases of middle life and even of higher ages consists in the adoption of all known preventive and curative medical measures in childhood and in youth, adolescence, and early manhood. It is chiefly in these years that the bill is incurred which has to be paid two, three, or four decades later." The truth of this statement is evident when we recall the rôle of various infections, and especially of the virus of rheumatic fever and of syphilis in causing arterial and other diseases.

The sketch of official health agencies in the United States is most instructive, and should be consulted by British readers. There is sound sense in the comment on medical education as still commonly conducted, that students have as their ideal the treatment of disease rather than the maintenance of health. A great deal is said to them about preventive medicine, but they visualise it chiefly as sanitation and community hygiene. Personal hygiene is seldom adequately taught. The suggestions on mutual benefit and group insurance are also worthy of careful study. In the United States action is proceeding largely on the basis of individual industries; with us it is progressing on commercial lines. In the chapter on special drives against disease attention may be drawn to the excellent discussion of the venereal disease problem. The value of the volume is increased by the admirable bibliography attached to each of its three parts.

COMMON INFECTIONS OF THE FEMALE URETHRA AND CERVIX.

By FRANK KIDD and A. MALCOLM SIMPSON. London: Humphrey Milford, Oxford University Press. 1924. Pp. 191. 7*s*. 6*d*.

THIS book is a description of the cases investigated by the authors in the female V.D. department of the London Hospital from January, 1917, till late 1920; 650 cases in all appear to have been seen, of which 237 only were gonococcal cases; 50 children came in the series, and 21 of the patients were pregnant and also infected with gonorrhœa. The numbers investigated therefore were not large.

It is an interesting book, somewhat unequal in quality. In the field which Mr. Kidd has made his own he is unsurpassed. Therefore the section on

examination of the urethra and the treatment of urethritis and of bladder infections is excellent, and will be of the greatest value to general practitioners, for whom the book seems to be intended. As an addition to the literature of gonorrhœa in women it must be taken less seriously—the number of cases seen is too small, and according to present ideas the cures are too easily come by. Everyone working with infected women in large numbers knows that with modern technique negative films and cultures are obtained in a subacute case in a short time; but it is also a well-recognised fact that relapses—not always due to reinfection, as Mr. Kidd seems to believe—are frequent. No after-history is given of any one of the 21 pregnant cases "cured before parturition" (p. 81), and there is no note as to the clinical or pathological condition a month or six weeks after delivery, which is regarded by many observers as the real test of cure in such cases.

A note on primary syphilis of the cervix gives rise to some doubt as to the amount of treatment the authors consider necessary (pp. 74 and 75): "the primary stage, when abortive treatment by salvarsan is possible" might be taken to indicate that the authors think one or two injections of salvarsan will completely rid the patient of syphilis. We feel sure that the last thing that the authors intend is to encourage half-hearted treatment of syphilis, which certainly causes the lesion to heal, but inevitably leads to relapses later and to the birth of infected children. There is an interesting section on treatment of gonococcal arthritis in which the authors rightly deprecate undue or unskilful massage and insist on the value of movements by the patient. An admirable chapter on the bacteriology of the region by Dr. Western, and another on ophthalmia neonatorum by Mr. Mayou, add to the value of the book; and a chapter on prophylaxis against V.D. will be of use to many practitioners. A few very good colour plates are included.

PSYCHIATRY.

Mental Diseases. A Text-book of Psychiatry for Medical Students and Practitioners. Third edition. By R. H. COLE, M.D. Lond., F.R.C.P., Physician for Mental Diseases to St. Mary's Hospital. London University Press. 1924. Pp. 356. 15*s*.

Insanity in Everyday Practice. By the late E. G. YOUNGER, M.D., M.R.C.P. Fifth edition, revised and edited by G. W. SMITH, O.B.E., M.B., Ch.B. London: Baillière, Tindall and Cox. 1924. Pp. 134. 5*s*.

CERTAIN changes have been made in the new edition of Dr. Cole's text-book. The principal alterations are a much elaborated chapter on the pathology of general paralysis, a rewritten description of the cerebro-spinal fluid, and a new section on the anxiety neurosis. The value of the book from the point of view of the student, for whom it is primarily intended, depends chiefly on the excellent descriptions of the clinical features of insanity, and in these no changes have been made. Although minor additions have been made in the chapter on treatment, a short paragraph reflecting the somewhat nebulous outlook of 20 years ago remains the only reference to the vaccine and other specific treatment of chronic septic states, and the possible influence of focal sepsis, and the importance of searching for it, are barely mentioned. Although such knowledge is, perhaps, not essential for examination purposes, it is surely of use to impress on the student that a bodily cause for mental derangement should always be sought for, and that a better understanding of immunology may eventually remove certain types of insanity from those large categories in which ætiology is still conjectural and treatment merely expectant. This omission detracts hardly at all from the value of an excellent manual, and we note it only because a dogmatic enumeration of the stereotyped factors in ætiology, with no adequate confession of our gross ignorance, and no hint as to the lines along which progress is likely to be made, must be apt to produce in the reader an attitude of passive acquiescence in a mystery, from which we must escape if psychiatry is to be advanced.

The late Dr. Younger's short manual on Insanity in Everyday Practice has been revised by Dr. G. W. Smith, his aim having been to bring it into accordance with more recent views of mental disease without altering its general purpose or character. The original author's intimate and readable description of the outward features of insanity are combined with much practical advice as to the immediate steps to be taken in dealing with various types of patient, and warnings as to pitfalls in the difficult situations which cases of mental disorder in general practice may provide. Actual experience of mental hospital work, however brief, can alone arm the practitioner adequately against these difficulties, but in so far as mere reading can be of service, this small volume will be found one of the most helpful of its kind.

VERTEBRATE ANIMALS.

A Manual of Land and Fresh-Water Vertebrate Animals of the United States (Exclusive of Birds). By HENRY SHERRING PRATT, Professor of Biology in Haverford College, Pa. Philadelphia: P. Blakiston's Sons and Co. Pp. 422.

THIS work deals with the Fishes, Amphibians, Reptiles, and Mammals of the United States and Southern Canada. It has been written to furnish students of zoology and geographical distribution with diagnostic descriptions of the land and fresh-water vertebrate animals of that part of the world, and numerous analytical keys are given by which the animals can be identified. To an extent it is a compilation of many other works dealing with special groups, and a full bibliography of the works referred to is given. It is well illustrated and all the illustrations have a bearing on the diagnostic points referred to in the text. In the section dealing with mammals, the splitting up of the various members of the family Muridæ into species and subspecies seems to have been carried to excess, but it speaks well of the thorough way in which the local races have been worked out by American zoologists. It is a book which should prove a valuable help to collectors and systematists on the particular branch of zoology with which it deals.

PATHOLOGISCH-PHYSIOLOGISCHE PROPÄDEUTIK.

Von MAX BÜRGER, A.O. Professor der Inneren Medizin und Oberarzt an der Med. Universitätsklinik, Kiel. Berlin: Julius Springer. 1924. S. 342. 82.90.

THIS book may be regarded as the type of the pathological text-book of the future. It contains no horrifying pictures of monstrous births nor lengthy descriptions of "histological appearances." The author has written from the standpoint that pathology is morbid physiology; this being the case, he has abandoned the static outlook of the old-time pathologist for the dynamic attitude of the physiologist. Such a book could hardly have been written until within the last few years. The General Pathology, edited by Pembrey and Ritchie, and published in this country in 1913 (of which a further edition is long overdue), was the first, and heretofore almost the only, work of the sort. Comparison of the two books is cheering in the indications provided of real advance in the knowledge of morbid processes within the last ten years. Prof. Bürger has been ambitious in his aim; all the systems of the organism are dealt with, and always from the standpoint of function. For the reader brought up on things in bottles or slices of tissue on bits of glass it will be difficult going; all of it is not, perhaps, entirely profitable, and much of it will have to be recast in the near future. None the less, there can be no doubt as to the high value of works of this sort in opening the way to a proper understanding of the processes underlying disease. An hour's intelligent study of this volume should do more to lead to such an understanding than weeks of

grinding at the histology of tumours. Practically all the references are to German publications. A wider outlook would have prevented the appearance of such anachronisms as the inclusion of the virus of yellow fever among the unidentified filter-passers.

THE APOTHECARIES' GARDEN AT CHELSEA.

Second edition, revised and enlarged. By F. DAWTREY DREWITT. London: Chapman and Dodd, Ltd. Pp. 136. 5*s*.

IN a second edition Dr. Drewitt has revised and enlarged his charming little romance of the "physic garden" at Chelsea, the additional notes on Linnæus being particularly interesting. We reviewed the first edition at length recently (THE LANCET, Jan. 20th, 1923), so that no full notice of the work will be required by our readers, whom we again recommend to make themselves acquainted with the story of this small oasis in the brick desert of London. The closing chapter on the trees to be found in the Apothecaries' Garden should open the eyes of Londoners to the variety of trees which are to be found, not only by going to the Garden, but by strolling in the metropolis; trees may be there seen which are generally associated with the narratives of distant travel. The suggested origin of the yew tree in our churchyards is interesting as showing that 2000 years ago contractors would use substitutes when they could do so with impunity.

JOURNALS.

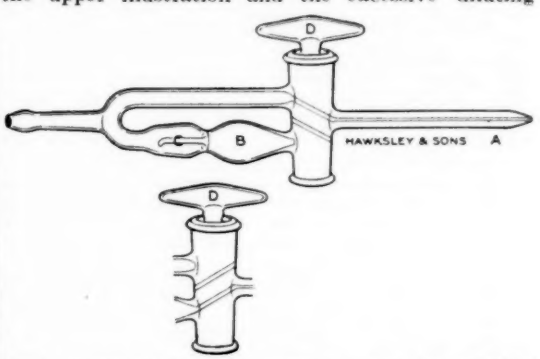
JOURNAL OF PATHOLOGY AND BACTERIOLOGY. Vol. XXVII., No. 2. Pp. 145–215. April, 1924.—The Constituents of Serum Useful in the Cultivation of the Gonococcus, by C. E. Jenkins (Salford). Blood is helpful chiefly in primary cultures and early subcultures; serum or plasma contains the needful substances, one of which, peculiar to blood, is destroyed by heating to 65° C., while the other, found also in muscle, resists heat up to 100° C. A convenient plan of sterilising slaughter-house serum by warming with acid and chloroform is described.—The Hæmophilic Bacteria of the Normal Throat, by J. H. Dible (Manchester). Examination of the throats of 100 normal persons revealed bacteria which required hæmoglobin in the medium in 47 cases. Critical examination showed that in 30 of these the organism corresponded with Pfeiffer's influenza bacillus. In 20 cases other hæmophilic organisms were present, most of which were hæmolytic.—Acid-fast Bacteria as a Source of Vitamin B, by S. R. Damon (Baltimore). A growth-stimulating substance analogous to vitamin B is produced by the timothy grass, Möller's and the smegma bacillus.—Compensatory Hypertrophy of the Suprarenals, by A. E. Boycott and C. H. Kellaway (London). Removal of one adrenal in young rabbits does not lead to compensatory hypertrophy of the other gland.—Non-specific Training of Anti-Body Production, by V. R. Khanolkar (London). Preliminary doses of Gaertner's bacillus increase an animal's capacity to produce agglutinins to that organism: so do preliminary doses of *B. coli*, paratyphoid B, *B. pyocyaneus*, and sodium cinnamate. But injections of staphylococci, ricin, horse serum, or yeast do not have this effect.—The Titration of Diphtheria Toxin and Antitoxin by Flocculation Methods, by A. T. Glenny and C. C. Okell (London). When people began to look carefully at what they were doing, they found that mixtures of diphtheria toxin and antitoxin are opalescent or flocculate at the point corresponding to neutrality by the usual animal test. The method, which has been exploited particularly by Ramon, has the advantage of giving quick results and of being economical. With most ordinary toxins the values found correspond with those given by subcutaneous or intracutaneous guinea-pig tests, but this is not always the case. The process, therefore, cannot replace the classical direct methods.—The Pathology of Iron Deficiency and Cotton-seed Poisoning in Pigs, by J. P. McGowan (Aberdeen).—Metastatic Carcinoma of the Pituitary Gland with Diabetes Insipidus, by A. Piney and I. Coates (London). A secondary growth from a breast cancer completely destroyed the partes posterior and intermedia of the pituitary; there was great polyuria. The pars anterior remained intact, and the case strongly supports the view that the polyuria of pituitary origin comes from the unopposed action of this portion of the gland.

Messrs. Baillière, Tindall and Cox inform us that the new edition of "Aids to Physiology," reviewed in our columns on Feb. 9th (p. 290), should have appeared under the sole authorship of Dr. R. A. Krause, for although Prof. J. Tait wrote the previous edition in collaboration with him, Dr. Krause is entirely responsible for this.

New Inventions.

AN AUTOMATIC PIPETTE FOR HÆMATOLOGICAL PURPOSES.

THE great difficulty of attaining accuracy in counting blood corpuscles has probably been encountered by all laboratory workers and the pipette which is here illustrated serves to obviate personal errors. The chamber B serves for the reception of the diluting fluid, which is sucked up to fill that chamber; any excess passes through the fine capillary and is trapped in the further chamber. The tap D is now turned into the position shown in the upper illustration and the excessive diluting



fluid contained in the stem A can be expelled by blowing through it. The stem is then cleaned with alcohol and ether in the ordinary way. Blood is now sucked into the stem A and through the bore of the tap. If the tap be now turned through an angle of 45° the blood in the stem is cut off. The tap is then turned through an angle of 45° and the chamber B is brought into communication with the blood when the two fluids can be expelled into a suitable small vessel and shaken. The apparatus is available for red corpuscles, leucocytes, and hæmoglobin. In the case of red corpuscles the chamber B plus the tap contain 100 parts of diluting fluid while the stem contains one part of blood. In the case of the leucocytes the figures are 10 and 1 respectively. The pipette for measuring 20 c.mm. of blood for the estimation of hæmoglobin is similar but simply possesses a plain U-tube above the tap. Cleaning of the apparatus is carried out by placing the rubber tube of the mouth-piece on the end of the stem A and sucking in and expelling distilled water, &c. The pipette, I think, avoids the difficulties which were associated with the Hirschfeld model, though somewhat resembling that instrument.

The pipette has been made for me by Messrs. Hawksley and Sons, of Wigmore-street, London, W.

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THE LANCET.

LONDON: SATURDAY, MAY 3, 1924.

MYOPIA AND THE CHOICE OF A CAREER.

THE report of the Council of British Ophthalmologists, published in the *British Journal of Ophthalmology* for April and reproduced in another column, is of the first importance. It is mainly concerned with the question how far myopia should be treated as a disqualification for candidates for scholarships and teacherships under local educational authorities, but it may also be taken as an authoritative guide in assisting parents to decide on a career for short-sighted children. The most important recommendations are as follows:—

"A child of 11 with three or more dioptres of myopia in the better eye should be rejected for scholarship training.

At the age of 15 those with more than four dioptres of myopia in the better eye should be deemed unfit to train for the teaching profession.

Candidates for entry into training colleges, who are, as a rule, about 18 years of age, if they have more than five dioptres of myopia in the better eye should be rejected."

These recommendations are calculated to cause a good deal of heart-burning both among parents and among clever children who, though they are short-sighted without spectacles, see normally with them and have never had any trouble with their eyes. Myopic children, in fact, are very apt to be bookworms, and while it may be difficult to say which is cause and which effect, the association is an instance of a vicious circle. The fact remains that many of these children, from all points of view except that of their eyesight, would seem peculiarly fitted both for scholarships and for the teaching profession.

What, then, is the justification for these recommendations? It is to be found in the following facts: (1) That in later life cases of weak sight are found to occur in those with myopia and myopic astigmatism in far greater proportion than in any other state of refraction; (2) that this condition is not congenital, but is apt to become more pronounced during the years of adolescence, especially in children and adolescents who are unusually studious. It is perfectly true that there are a large number of myopes, of even moderately high degree, who seem to suffer no inconvenience and whose eyes do not give out even in later life under the stress of employment involving continuous close work. In legislating, however, we must have regard to the greatest good of the greatest number, and though it may be perfectly true that there are many myopes, even of comparatively high degree, who would benefit both themselves and the community by taking up studious careers, and would suffer neither inconvenience nor even partial loss of sight later on, unfortunately in early life we have no means of separating these from the others of whom the opposite is true. In order that the authorities, and parents themselves, may realise how great is the risk in encouraging these myopic children to train themselves for employments involving continuous close work, we commend the careful study of some figures published a few years ago by Mr. BISHOP HARMAN.[1] From his private case-books, he tells us, he picked out all those myopes of over 3 D. who were between the ages of 20 and 60 years, cases of monocular myopia being excluded. The total number of myopes thus collected was 480. The cases were separated into two main sections: (1) Habitual close workers, and (2) those not so engaged. In each section there was an age-grouping in decades, and also in groups, according to the grade of their myopia—from 3 to 5 D., 5 to 10 D., and over 10 D. In cases of astigmatism the average of the four meridians was taken as the degree of myopia. Note was made of the events of their working history, the occurrence of indications of abnormal stress in work, breakdowns which entailed cessation of work, or change of work where that was possible, or a continuance of the same work under modified conditions; and lastly, of direct evidence of damage to the eyes. Of the 480 cases investigated, 38 per cent. were engaged in habitual close eye work, and 62 per cent. were not occupied in continuous close eye work. The extent of the failure amongst the habitual close eye workers as compared with the other patients was remarkable. No less than 53 per cent. of the close workers failed at some time during their career, and of these more than one-quarter, or 15 per cent., of the total of habitual close workers sustained permanent damage to the eyesight. Amongst the myopes who were not close workers failures were few—only a total of 9·4 per cent. The fact that the majority of these (7 per cent.) sustained damage to their eyes is accounted for by the comparatively large proportion of very high myopes in this group.

Mr. HARMAN'S tables show not only the above comparison, but also that there is a gradual increase in breakdowns and damage to the eyes with the increase of age and grade of myopia. Amongst the ordinary patients there was only one case of trouble at any age amongst those with less than 5 D., but quite a number amongst the habitual close eye workers (out of 71 cases, 21 breakdowns and 3 cases of damaged sight). In the cases of myopia from 5 D. to 10 D. the figures are far more striking. Of 81 habitual close workers, no less than 40 had had breakdowns in their work and 9 had sustained permanent damage to the sight; whilst of 118 not engaged in close work there were only 3 breakdowns and 4 cases of damaged sight. In the cases of myopia of still higher grade the figures are less comparable owing, on the one hand, to the fact that the myopia in many of these cases must have developed in comparatively early childhood and served as a warning against any employment trying to the eyes, and on the other hand, to the much enhanced risk of damaged sight in these cases, irrespective of whatever precautions are taken. These facts, as it seems to us, afford ample justification for the recommendations of the Council of British Ophthalmologists. They are in consonance with what we may term the orthodox teaching as to the dangers of close work for myopes, and although some recent authorities have attempted to throw doubt on this teaching we cannot evade the conclusion that the verdict contained in the report—which proceeds from the leaders of the ophthalmic branch of the medical profession in this country—is sound.

[1] Transactions of the Ophthalmological Society, 1922, p. 20.

SCHOOL CLOSURE FOR INFECTIOUS DISEASE.

FROM time to time the parents of children away at boarding schools are agitated by the intimation that infectious disease has occurred at the school, and that in consequence the school will be closed before the date on which the term should end. No doubt in individual and exceptional instances such a precaution as school closure may prove to be the smaller of two evils. We doubt, however, whether the occasions for its application are nearly as frequent as headmasters, through their own anxiety or through the cautious counsels of their medical advisers, would lead us to believe.

The experience of the school medical service of this country appears steadily to be crystallising in a form opposed to the use of school closure as an instrument for the control of infectious disease. The arguments which apply to the procedure in its relation to the public elementary schools, both urban and rural, in this country seem to have special point in respect of boarding schools. The closure of the school involves a general dispersal of the occupants to families or communities, in many of which they will not be under any degree of careful supervision; the one original focus of infection may thus multiply itself in a number of different localities. Had the school been kept open, and had the daily medical and nursing supervision been adequate, each fresh case as it arose could, in most of the infectious diseases, have been detected at a stage before infectiousness had developed to a material degree. Moreover—and this is an aspect which appeals to the long-suffering parent, though he accepts the prevailing practice with singularly little grumbling—the child would receive the term's schooling contracted for and paid for, but only in part received under conditions of premature closure. Undoubtedly the present practice is based, not on closure as a true means of controlling infectious disease, but on the lack of pains taken in many boarding schools to evolve an effective machinery for the daily supervision of the health of the pupils. The happy-go-lucky attitude which enters so much into the spirit of the recreations of the boarding school permeates the attitude of the principal and of the staff towards the physical health of the inmates. Probably quite a small proportion of the masters have any knowledge of the symptoms and signs of infectious disease approaching that acquired by the elementary school teacher, while the school nurse, with a thorough grounding in infectious disease, who is so closely linked up with the public elementary school, is, on the whole, distinctly more expert in this subject than is the average matron at a boarding school. We believe that some degree of concentration on this aspect of the control of infectious disease in residential schools would result in a material drop in the frequency of premature closure.

But while the experience of school medical officers in the service of local authorities is in general increasingly unfavourable to closure as a preventive measure against the spread of disease, it must be confessed that their practice does not always march with their precept. It is not uncommon for school medical officers to advise closure of an elementary school department on account of infectious disease when the attendance drops to a low level—perhaps in the neighbourhood of 50 per cent. of the normal—such closure being largely for the convenience of the education authority, and to save loss of grant from the Treasury on account of low attendance rather than because the medical officer has any faith in closure as a means of controlling the outbreak. It needs something of the casuist to draw any clear distinction between the school medical officer acting on such a basis and the headmaster of a boarding school who closes his school on account of infectious disease. Is there not scope for both to review their methods and to define the procedure which will make for the greatest good of the children under their supervision?

TUBERCULOSIS OF THE LARYNX.

THE Medical Research Council has just published[1] an instructive account by Sir STCLAIR THOMSON of his experience of laryngeal tuberculosis at the King Edward VII. Sanatorium at Midhurst over a period of ten years. During this period 2541 cases of pulmonary tuberculosis were admitted, and among them were 477 cases of tuberculous invasion of the larynx. The author adopted the happy method of passing all his case-cards and notes to an independent worker, Dr. D. A. HUTCHESON, who compiled the figures, tables, and averages without any suggestion from anyone as to the conclusions which might be anticipated, thus avoiding to a very great extent the personal bias inevitable in all human undertakings. The conclusions to be drawn from the statistics thus analysed do not, as a whole, differ greatly from the many similar figures which have previously been compiled. In one respect, however, there is a marked difference; while numerous tables compiled up to ten years ago show that laryngeal invasion was two to three times more common in men than in women, the Midhurst figures make the incidence almost exactly equal. Sir STCLAIR THOMSON points out that most of the women admitted to Midhurst are wage-earners who follow the same, or similar, employments as the men—viz., clerks, typists, teachers, &c.—and concludes that any increased susceptibility of the male is due to social, and not to sexual, differences. Before 1905 the post-mortem records at the Brompton Hospital showed twice as many cases of tuberculous laryngitis in men as in women, but since 1908 the proportion has been almost identical; the question arises, is this the result of the change of habits and occupation among women? For the last five years of this investigation, involving 1456 patients, notes were made of the condition of the nares and pharynx; the conclusion is that affections of this region are no more common in those with laryngeal invasion than in those whose disease is limited to the lungs; also, though it would be difficult to make a comparison of the nose and pharynx in sanatorium patients with an equal number of the healthy public, the author's impression is that trouble in these regions is no more common in a sanatorium than out of it. Three cases of intrinsic cancer in phthisical patients provide interesting examples of the difficulty of differential diagnosis. The author concludes that epithelioma of a vocal cord is a very slow-growing tumour; if it is so limited as to be difficult to recognise, a delay of two or three months in clearing up the diagnosis can do little harm. There is also a unique case of aspergillosis of the lungs and larynx, the latter presenting a typical picture of tuberculosis; recovery was rapid under sanatorium treatment.

So much for the pathology of laryngeal tuberculosis. The chief feature, and the great value, of Sir STCLAIR THOMSON'S report lies in the emphasis laid on the remarkable benefit which the tuberculous larynx

[1] Special Report Series, No. 83. H.M. Stationery Office. 2s. 6d.

derives from sanatorium régime, including good air, regular rest, diminution of voice use, control of cough, and cessation of alcohol and tobacco. The tuberculous larynx, as seen in a clinic among town-dwellers, is usually in a condition of general congestion, which makes it difficult to distinguish the deposits of disease, angry granulations being bathed in abundant pus. All this subsides in sanatorium without local treatment, and it soon becomes evident that 20 to 50 per cent. of the unhealthy appearances were added conditions, the result of hygienic unrighteousness. Practically all the laryngeal cases at Midhurst were "put on whispers"; the patient is told to speak only on the lips, and is warned against using a forced whisper or speaking at all out of doors or at table. Of the 477 laryngeal cases, 336 had no other special treatment, and of these 50 cases were cured. Complete silence, with the use of writing block and pencil, is rightly recognised to be a severe measure; it was reserved for recent and acute cases, especially of the glottic margin, and only for such as offered a fair prospect of cure; it was seldom prescribed for a longer period than six months, for if the condition did not clear up within that time it was recognised as unpromising and put on to "whispers" or, in some cases, treated by the galvano-cautery. Silence was prescribed for 67 patients, of whom 23 were cured. The only active method of local treatment employed was galvano-cautery puncture; this was used when the general conditions were favourable and the spontaneous healing, after making progress, appeared to be slow or stationary. Local anæsthesia and the "indirect" method were always employed, two to six punctures were made at a sitting, and never more often than once a month. In all, 74 cases were considered suitable for this method of treatment, and of these a cure was obtained in 46. Thus of the 477 cases of laryngeal tuberculosis, 119 (24·9 per cent.) were cured, 73 by restriction of voice use, and 46 by cautery puncture, in addition to the sanatorium régime. This is, as Sir STCLAIR THOMSON remarks, a result which is very encouraging, when compared with Sir MORELL MACKENZIE'S statement of 50 years ago that "of all the cases that I have ever seen, I only know of four in which I have reason to believe that the disease was entirely arrested." The direction in which further progress can be made lies chiefly in earlier diagnosis and more prompt resort to sanatorium, and especially in a general recognition of the fact that persistent hoarseness requires expert investigation. A comment upon a sentence in a recent annotation in our columns is curious, for this report lays stress on the difference between present-day methods and results when compared with the narrow outlook and hopeless results of a generation ago.

AN IMPROVED ACETONE-PICRATE PROCESS FOR INSULIN.

CERTAIN modifications of the acetone-picrate process for the preparation of insulin, described by Dr. E. C. Dodds and Dr. F. Dickens in THE LANCET of Feb. 16th, 1924, p. 330, have been published by these authors in the April number of the *British Journal of Experimental Pathology*. That watery extracts of the pancreas could yield active material was known from the beginning of work on insulin, since Banting and Best's original method consisted in a watery extraction of pancreas, and the first preparation of active substance was obtained in this manner. When tried on a large scale, however, the yield was so poor as compared with the alcohol extraction process that the method had to be abandoned. Best and Scott state that out of some hundred experiments their best yield obtained by aqueous extraction was only a quarter of that obtained by their alcohol process. Two causes of difficulty arise: (1) The inhibition of tryptic action; (2) efficient separation of insulin from the relatively enormous mass of protein. The authors state that the first cause of loss was reduced, and the second difficulty completely overcome, by the method described by them in our columns. Summarised briefly, the method consisted in extracting the pancreas with 1 per cent. formic acid, and precipitating the proteins and insulin from the resulting solution by means of picric acid. The picrates were then extracted with acetone. This separates the insulin picrate from the proteins, the acetone dissolving out the former and leaving the latter undissolved. The acetone solution was then diluted with equal volumes of saturated aqueous picric acid and water, when the insulin picrate separated. This was collected, washed, and converted to the hydrochloride by Dudley's method. The average yield by this method was in the neighbourhood of 300 rabbit-units per kilo of pancreas. This process was found to be difficult on a large scale owing to the time expended on the separation of the solid pancreatic tissue in the first stage. Also, in view of later experiments, it became obvious that about 40 per cent. of the yield was lost by the incomplete precipitation of the picrate by dilution. In order to improve the process it was necessary (1) to include some powerful tryptic inhibition to the extracting substance; (2) to adopt the removal of the acetone by distillation, before precipitating the picrate. Many substances are known to inhibit the action of trypsin, but the majority also act upon insulin and impair its activity. Paraldehyde is free from this objection, and its addition was found to be advantageous. The modified method differs from that described in THE LANCET only in the addition of 5 per cent. of paraldehyde to the extracting fluid. Although paraldehyde is immiscible with water in this proportion, an emulsion is formed on mincing with the pancreas. The result of a typical experiment was a yield of 535 rabbit-units per kilo, as compared with 300 by the original process. As to distillation, some investigations on the properties of the picrate have shown the incompleteness of the precipitation from acetone solution obtained by the dilution method. It was thus clear that an increased yield should be obtained as a result of distilling off the acetone. This procedure was adopted with good results, and the next step was to combine both of these modifications, and this was done, the yield of a typical experiment being equivalent to 1040 rabbit-units from 1 kilo of pancreas. Although the results obtained by this process were consistently good, and the time factor was reduced to two days, there was still the objection that the first filtration was troublesome on a large scale, owing to the gelatinous nature of the material. In view of the ready solubility of insulin picrate in 70 per cent. acetone and the insolubility of protein picrates, it was an important point to ascertain whether this preliminary aqueous extraction of the pancreas was necessary, and whether picrates could not be prepared simply by grinding pancreas with solid picric acid. The application of picric acid to the original tissue, as a step in the extraction of insulin, was discussed by the authors with Dr. H. W. Dudley, who informed them that it was already under trial by him for fish islets. After a series of experiments on these lines, the authors evolved a method, of which full details are given in the article, whereby the average yield of hydrochloride was equivalent to about 1000 rabbit-units from 1 kg. of pancreas, and had a rabbit-unit of 0·5 to 1 mg. In one experiment (Experiment 24), in which 8 kilos of pig pancreas were worked up by this method, the high yield of 3·690 g. was obtained, the rabbit-unit of which was 0·25 mg., thus giving a total yield of 14,760 rabbit-units, or 1845 rabbit-units per kg. of pancreas. So far as the authors know, this is the highest yield of insulin recorded. The authors' comments on the method are as follows: 1. The use of solid picric acid not only renders the first tedious

filtration unnecessary, but by converting the insulin directly to picrate reduces the time during which tryptic action may occur to a minimum, thus increasing the yield. 2. By centrifuging the acid-alcohol solution of the picrate in the last stage a large quantity of insoluble material is removed. This consists of protein insoluble in 75 per cent. alcohol, and is quite inactive physiologically. It probably consists of part of the fraction which is precipitated at an earlier stage in the Collip process. The removal of protein in this way gives a product of a very high degree of purity. 3. The rabbit-unit of the "crude hydrochloride" is in the neighbourhood of 0·5 mg., which is as low as that of the purified insulin made by the Collip process and subsequently purified by Dudley's method. 4. The time of the complete process is about one day. Small batches of up to 10 kilos have been worked up within six hours. 5. The process presents no difficulties with regard to filtration, as all the precipitates are very easily handled. The rabbit-units given in this paper are in terms of the original Toronto units—viz., the quantity required to lower the blood-sugar of a 2-kilo rabbit to 0·045 per cent. within two hours.

HOSPITAL PROBLEMS.

THE serious attention given to different aspects of the hospital problem at the conference reported on p. 923 is timely in view of signs that the provision of hospital beds throughout the country is inadequate to the needs of an increasing population, and of the financial difficulties which alone prevent voluntary hospitals from enlarging size and scope. We note in our news columns (1) that Mr. Wheatley (*v. infra*) has requested the Voluntary Hospitals Commission to inquire into and to report upon the extent of the additional voluntary hospital accommodation required in England and Wales, and the best means of providing and maintaining it; and (2) that in the Manchester and Salford districts, for example, it is computed that there are nearly two cases waiting for each of the 2444 voluntary hospital beds available. The fact that beds in infirmaries (when this word is used in the sense of hospitals under the Poor-law) could be utilised at need to supplement the voluntary hospital beds is recognised, but there is general agreement that the public will not avail themselves of such facilities under the present system of administration. There is much in common between the ideals set out by the Labour Party for the provision of a health and hospital service and the principles which have long guided those who are responsible for administration of voluntary hospitals. The admiration for the voluntary system expressed by prominent Labour leaders is sincere, and there is no reason why the coördination and coöperation for which they plead should necessarily lead to its extinction. Such conferences as that just held should be fruitful of a better understanding between those sections of the community which have as a common aim the maintenance of an efficient health and hospital service throughout the country.

VOLUNTARY HOSPITALS COMMISSION.—In reply to a recent question in the House of Commons regarding the number of persons requiring hospital treatment but unable to obtain it through lack of beds, the Minister of Health indicated that he proposed to ask the Voluntary Hospitals Commission to undertake an inquiry into the shortage of hospital accommodation. Mr. Wheatley has now remitted this question to the Commission with the following terms of reference: "The Voluntary Hospitals Commission are requested to inquire into and to report upon the extent of the additional voluntary hospital accommodation required in England and Wales and the best means of providing and maintaining it." The Commission will be communicating immediately with the Local Voluntary Hospital Committees in regard to the steps to be taken in pursuing the investigation, and the matter will also be the principal subject of discussion at the conference of representatives of the Local Voluntary Hospital Committees, which is to be held on June 18th at the Ministry of Health. It is understood that a separate inquiry will be undertaken in regard to hospital accommodation in Scotland.

Annotations.

"Ne quid nimis."

IMPERIAL SOCIAL HYGIENE CONGRESS.

THIS Congress, as has been already announced, has been organised by the National Council for Combating Venereal Diseases, and sits at Wembley, during the British Empire Exhibition, from May 12th to 16th. The Medical Section sits on Thursday, May 15th, with Mr. E. B. Turner as President, and as the majority of medical practitioners will be unable to spare time to attend the whole Congress, a special arrangement has been made for day tickets for this section. These can be obtained from Miss E. O. Grant, Secretary, N.C.C.V.D., 102, Dean-street, London, W. 1, at a cost of 5*s.*, this sum including entrance to the grounds. In the morning there will be a special display, for medical practitioners only, of the medical film, the Diagnosis and Treatment of Gonorrhœa in the Male. This has been produced for the N.C.C.V.D. under the direction of Colonel L. W. Harrison, who will be present to explain the film. In the afternoon, from 2.30–5, there will be a conference on the "Position of the General Practitioner in Anti-Venereal Disease Schemes." Papers are being contributed by Dr. C. E. S. Flemming, Dr. Madeleine Archibald, and Dr. Alfred Cox, and others will take part in the discussion afterwards, which will be thrown open for participation to any member of the audience.

ENDOTHELIUM AND ANTIBODIES.

SCIENTIFIC literature is at times apt to be a little monotonous in form if not in substance. Eruditus makes certain observations or experiments from which he deduces a certain conclusion. And if the substance as well as form are conventionally beyond reproach, the communication may still be rather like Johnson's dictionary—very interesting, but the least thing deficient in plot. It is therefore quite refreshing to find in the *Journal of Hygiene* (Vol. XXIII., p. 355) a paper by Dr. A. Eastwood, of the Ministry of Health, of a purely speculative character which seeks to do what is so much needed nowadays to put together some of the superabundance of facts into a new and coherent general notion. Antibodies are generally assumed, perhaps as much for convenience of discussion as for an expression of absolute truth, to be "somethings" which are produced by the body in response to the stimulation of a foreign protein, the antigen. Whether these "somethings" are new proteins or old proteins impressed with new properties is relatively immaterial. As a working hypothesis it has also been fruitfully assumed that the antibodies in some way fit the antigens, giving the characteristic and apparently qualitative specificity. Dr. Eastwood rightly points out that the foundation for all this is nebulous, though he does not, perhaps, attach sufficient weight to the physiological phenomena, the influence, for example, which practice and experience has on an animal's capacity to "produce antibodies." He then points out that no one organ in the body can be regarded as the generator and source of antibodies, but that a variety of evidence indicates that they may be produced anywhere—which, with any faith in the connexion between structure and function, leads to the guess that either connective tissue or endothelium has a good deal to do with it. From this he develops the conception that what we call antibodies are normal body constituents which have been altered by passing through the endothelium separating tissue fluid from blood, and that what the antigen does is not to stimulate some tissue to do something, but to alter the endothelium so that the fluids passing through are modified to some extent in a specific way. He regards "antibodies" as a living mechanism in the circulating plasma rather than as molecules of parti-

cular chemical configurations, and he rightly objects to the assumption that the test-tube phenomena of the serologist represent adequately the properties of live plasma. For a full presentation of his ideas the original memoir must be consulted. It should, however, be added that Dr. Eastwood is fully alive to the difficulties in the way of his interesting and suggestive hypotheses. On the particular point of endothelial filtrates he might, perhaps, have added more. While most of the antibodies (sensu serologico) of an immunised animal are in the blood, bleeding and the subsequent restoration of the blood volume by the taking up of tissue fluid from outside the vessels does not decrease their concentration for any length of time. Inconclusive as they are, these observations long since suggested that antibodies arose in some way during the passage of liquid from the tissue spaces into the blood.

A PROPHYLACTIC HUT.

THIS week-end Sir Henry Gauvain is opening the "Howard Marsh Hut" at St. Andrew's Home, Hayling Island, which has been presented to the Brompton Hospital by Mrs. Marsh in memory of her husband. St. Andrew's Home itself has been in existence for a number of years, and was selected by Dr. W. J. Fenton as an ideal place for the treatment of debilitated, anæmic, and under-developed children. The home stands just back from the beach, which is one of the safest in England, sloping almost imperceptibly to the sea, and leaving, except at actual high tide, a large expanse of firm sand covered for a considerable distance by only a few inches of water. Here the children can spend most of the day, returning to eat and sleep in shelters open entirely on one or more sides to the air. Clothing is reduced to a minimum, and what little is worn in winter is of the loosest and most hygienic pattern. In November, 1922, a hut of ten beds was erected, to which 37 of the most miserable and undersized children attending the Chelsea Tuberculosis Dispensary were sent during the past year. The results exceeded expectation. With an average stay of three and a half months the average gain in weight of these children was 8 lb. 3½ oz. (the greatest being 20 lb.) associated with a gain in height of 1 to 2½ inches. Naturally these results have not been reached without effort, and the success is rightly attributed in large part to the ceaseless coöperation of Dr. A. J. May and Miss Twining, medical officer and matron respectively of St. Andrew's Home, with officers of the Invalid Children's Aid Association, not forgetting the guard of the 10.15 train from Victoria. In its new and enlarged form the hut may prevent many of these so-called pretuberculous children from becoming the victims of tuberculous disease.

TREATMENT OF VARICOSE VEINS BY INTRAVENOUS INJECTION OF QUININE.

ALTHOUGH many ingenious operations have been devised for the relief or cure of varicose veins, few, if any, have circumvented the danger of thrombosis and embolism. There are, in fact, few large statistics of excisions of varicose veins in which thromboses and pulmonary embolism do not figure more or less conspicuously. In a review of this subject Dr. Henry Bardy,[1] of Helsingfors, gives an account of an incident which was singularly tragic. A young woman, looking the picture of vigorous health, consulted him for large but strictly limited and uncomplicated varicose veins. The case was one that seemed eminently suited for Babcock's operation, supplemented by excision of the great saphena vein. But when she was advised to undergo this operation she hesitated; her best friend had died of embolism as a sequel to it. She consented to it, however, when she was reassured by the statement that this danger could be avoided by strict rest in bed for a considerable time after the operation. The operation itself was perfectly successful, the wound healing without sepsis or other complications. She got up on the fifteenth day and fell dead on the floor. The necropsy showed embolism of the pulmonary artery following detachment of a thrombus from the stump of the great saphena vein. Having experienced another somewhat similar fatality among his 133 operations for varicose veins, Dr. Bardy has recently been exploring with his assistant, Dr. Ulfves, the possibilities of artificially provoking thrombi which would be firmer and more adherent to the walls of the veins in which they were first formed than the thrombi formed under ordinary conditions. They have found that the introduction of a solution of quinine into a vein not only hastens the rate of coagulation of the blood, but also effects changes in the walls of the vein favouring firm union between them and a blood-clot. Dissection of a vein, in which thrombosis had been artificially induced by an injection of quinine, showed that not only was the clot firmly attached to the vein, but that its wall was permeated by a blood-stained gelatinous substance. These investigations give support to the procedure advocated by Genevrier in 1922 in *Monde Médical*, No. 611. Genevrier's solution is: hydrochloride of quinine, 4; urethan, 2; distilled water, 30. The patient sits with legs hanging down, the field of operation having been disinfected with iodine. From 0·25 to 0·5 c.cm. of the solution is injected, an ordinary hypodermic syringe with a fine-pointed needle being used. It does not matter, and may, indeed, be advantageous, if a little of the solution fails to reach the lumen of the vein, and is deposited in its wall or in the immediate neighbourhood. The site of the puncture is closed with a little cotton-wool and collodium, and the injection is repeated about 8 cm. higher up the leg. Genevrier seldom injects more than a total of 4 c.cm. at one sitting. The resultant thrombosis is somewhat painful during the next few days, and it is advisable to defer the second series of injections for a week. Genevrier has given more than 4000 such injections without signs of embolism, and Dr. Bardy has given more than 500 injections to 26 patients without having to register a single accident. If further investigations should prove that the artificial quinine thrombus possesses sedentary and adhesive properties greatly in excess of those of the accidental thrombus, we may perhaps hope to see the operative treatment of varicose veins entering on a chapter less frequently punctuated by the tragedies of the fugitive thrombus.

[1] Finska Läkaresällskapets Handlingar, 1924, lxvi., 47.

VOCATIONAL CANCER.

WE reported not long ago[1] a legal test case of vocational cancer in which the point at issue lay in whether "epitheliomatous ulceration" or "epithelioma of the scrotum" contracted in the course of a worker's employment as a mule-spinner was a disease for which compensation should be paid. The following two further cases of vocational cancer have since come before coroners' courts in the North of England, and out of one of them an important suggestion for the prevention of the disease has emerged. On April 21st at Middleton the county coroner, Mr. E. N. Molesworth, held an inquest into the cause of death of John William Fitton (53), who up to August last had been employed for about 18 years as a cotton spinner. Medical evidence by Dr. W. D. Findlay showed that in February last deceased suffered from an ulcer of the scrotum with secondary infection of the glands in the left groin. He was subsequently admitted into the Royal Infirmary, Manchester. Dr. Findlay expressed the view that the deceased's occupation was primarily responsible for his final illness—cancer of the scrotum. A verdict in accordance with the medical evidence was recorded. The Manchester city coroner, Mr. C. W. Surridge, on April 23rd concluded the inquest on John Allen (50),

[1] THE LANCET, April 12th, 1924, p. 773.

who died in the Crumpsall Institution on March 16th. The deceased had been employed for nearly 20 years in a chemical works at Weaste as a pitch-getter. Mr. Seal, H.M. Inspector of Factories, and Dr. S. A. Henry, medical inspector under the Factory Acts, attended the inquiry. In March deceased was certified to be suffering from cancer of the scrotum, which was attributed to the handling of pitch. As a pitch-getter Allen had to break up very hard pitch by driving in wedges with a heavy hammer, and also to place the larger pieces on lorries and shovel the smaller fragments. All this was done in the open air, and a certain amount of dust was produced by the breaking up of the pitch. The deceased had suffered from the epitheliomatous tumour for 18 months, and the inguinal glands were involved. The coroner returned a verdict that Allen had died from cancer due to his work in tar. Mr. Surridge, addressing the secretary of the company who employed Allen, said that they were not at present bound by law to have any medical examinations of their employees, adding he would like to ask if they were prepared, in view of this case, to take steps to have an examination. The secretary replied that they were, and that already a number of their men had been examined, and the company intimated that they were prepared to have regular periodical examination of their men in the hope of stopping such cases. The coroner said that this was a most praiseworthy attitude.

TREATMENT OF POTT'S DISEASE.

THE large statistics which have recently been published should enable us to form a fairly balanced opinion of the comparative merits of conservative and operative methods of treatment in Pott's disease. These methods, it would seem, are to be regarded rather as complementary than as competitive, and a recent paper by Dr. Henning Waldenström,[1] of Stockholm, lays stress on the wisdom of preparing for operative treatment by a prolonged course of immobilisation in plaster. Since he began to employ Albee's method about ten years ago, he has followed a procedure which he calls "osteosynthesis after gradual correction." Of its value in other hands he is unable to speak, for the simple reason that no one has hitherto adopted it in a large series of cases observed over a considerable time. But of its value in his own hands there can be doubt, and up to the end of 1922 he had treated 80 cases in this manner. The fate of all was ascertained in the spring of 1923, and it was found that none of the seven deaths could be traced to the operation. The treatment being particularly difficult in childhood, the patients were classified according as they were under or over the age of 15. There were 66 patients under this age, and in 58 of these 66 cases recovery was effected with excellent functional and cosmetic results. Before these results were, however, attained, the careers of many of the patients were chequered. In as many as 14 cases the tibial graft fractured, and in the seven cases in which the operation was repeated on this account ideal results were ultimately obtained. Several of these fractures were due to severe injuries such as a fall from a great height or a spill on ski, and it is evident that the Albee patient who would live the life of an athlete may sometimes find himself actually and metaphorically skating on thin ice. When a child has exhibited signs of kyphosis for half a year, Dr. Waldenström refuses to operate until it has been recumbent in a Lorenz plaster bed for a year, and he abides by this rule even if the kyphosis is completely corrected before the expiry of this time. In spite of this precaution he has found that the surgeon may be surprised by the continued extension of the disease, and if the child is less than 3 or 4 years old it is better to wait at least two years after the onset of the disease. Dr. Waldenström is as careful in his post-operative as in his pre-operative treatment, and the fact that he can claim complete correction of the kyphosis and restoration of normal functional capacity in 80 per cent. of all his cases is doubtless largely due to his post-operative measures, which include immobilisation for two to three months in a plaster bed, then the wearing for another two or three months of a plaster corset, and finally the wearing of a steel corset for a year or two.

[1] Acta Chir. Scand., 1924, lvi., 463.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

THE report for the year 1923 will be presented at the annual general meeting of the Society on May 7th. Since the last report 11 new members have been elected and 28 have been lost owing to death and resignation. The Society at the present time consists of one honorary, 152 life and 136 ordinary members, making a total of 289. The invested capital now stands at £147,650; in conformity with the by-laws only income may be used for the payment of grants and expenses. The income from investments during the year amounted to £4642, £313 10s. were received from subscriptions and donations; the working expenses were £350. During the year one widow died and one came on the funds; on Dec. 31st there were 51 widows and 6 orphans in receipt of grants. £4497 10s. were distributed in grants during the year. Two orphans during the past five years have received between them from the Brickwell Fund £575 to enable them to study for the medical profession; both qualified this year and are now holding house office in a London hospital. Membership of the Society is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius of Charing Cross. Relief is granted to the necessitous widows and orphans of deceased members of three years' standing and of life members. At the present time the widow of such member who has an income of not more than £125 a year receives a grant at an average rate of £50 per annum, paid half-yearly in advance, and each orphan, up to the age of 16, receives a grant of £40 per annum. An orphan, on attaining the age of 16, ceases to be eligible to receive grants from the ordinary funds. There are, however, two special funds from which grants can be made to orphans after the age of 16, and also special grants from £10 to £25 to widows. The annual subscription for a member who at the time of his election is under 40 years of age is 2 guineas, if over 40 but under 50, 3 guineas, and if over 50, 4 guineas.

TYPHOID FEVER SIMULATING ACUTE APPENDICITIS.

Dr. F. de Gironcoli,[1] of the Third Surgical Division of the Civil Hospital at Venice, who records an example in a girl aged 11, discusses the cases of typhoid fever with sudden onset which may simulate acute appendicitis. One of the first cases of the kind was published by Kirkebride in 1891, but Moizard, in 1899, is to be credited with having drawn special attention to the form of typhoid simulating appendicitis. After the appearance of Moizard's communication a series of cases of this kind were published in which the subsequent progress of the disease enabled one to exclude appendicitis. In other cases, as in that reported by Gironcoli, the persistence of severe local symptoms favoured the suspicion of appendicitis and was the cause of an operation being performed. In a large proportion of these cases the appendix was found to be normal, or the changes in it were not sufficient to account for the severity of the symptoms. In other cases, again, the appendix itself was found to be more or less normal, but changes were found in the neighbourhood which explained the pain and other symptoms, and enabled a diagnosis of typhoid fever to be made. Gironcoli's conclusions are as follows: (1) cases of typhoid fever may occur with a sudden onset simulating acute appendicitis; (2) the differ-

[1] Riforma Medica, 1923, xxxix., 559.

ential diagnosis between typhoid fever in the early stage and appendicitis is occasionally impossible; (3) when symptoms of acute appendicitis are present, even if typhoid fever is suspected, one should not wait longer than 48 hours before operating; (4) appendicectomy in the early stage of typhoid fever does not aggravate the course of the disease.

MEDICO-LEGAL IMPORTANCE OF BLOOD-GROUPS.

AT the recent meeting of the Medico-Legal Society Dr. G. Roche Lynch told the story of blood-groups from their first discovery in 1900 with a view to determining their importance, if any, from the medico-legal standpoint The relative numbers of these groups in the ordinary population are now fairly well known as well as the broad differences found between Europeans and Asiatics. These were given by L. and H. Hirschfeld [1] in 1919 as follows:—

Cases.	Groups. I.	II.	III.	IV.
Europeans—				
Average of 4000 ..	4·70 ..	41·23 ..	12·14 ..	41·93
Asiatics—				
Average of 2500 ..	6·74 ..	21·84 ..	32·74 ..	38·68

Of the various theories advanced in explanation of these facts Dr. Lynch finds that of Dungern and Hirschfeld alone at all convincing; they postulate two agglutinogens and two agglutinins. The application of the test lies in two directions, (1) blood-stains, (2) paternity cases. In the case of a man charged with murder, it might be claimed by the prosecution that blood-stains found on him were from the victim, and by the defence that they were from himself; the group of the stain would in many instances enable one or other of these suggestions to be negatived. Tables by Dyke and others give the blood-groups of the offspring that might be produced by any combination of parents:—

Parents.	Offspring may be—	Cannot be—
I. and I.		
I. ,, II.		
I. ,, III.	I., II., III., or IV.	—
I. ,, IV.		
II. ,, III.		
II. ,, II.	II. or IV.	I. or III.
II. ,, IV.		
III. ,, III.	III. or IV.	I. or II.
III. ,, IV.		
IV. ,, IV.	IV.	I., II., or III.

It would seem to be possible to demonstrate from the blood-groups that a given child could not have been produced by some particular parents—e.g., a Group II. child could not have sprung from two Group IV. parents.

Dr. F. C. Martley, who followed Dr. Lynch, gave an account of the technique employed to determine to what group any person's blood belongs and the modifications necessary to apply when investigating a blood-stain. He first demonstrated the method ordinarily used to test a particular blood: a drop of II. serum and a drop of III. serum are placed at either end of a slide and a little of the blood is taken up on a platinum needle and mixed with each; agglutination can be readily seen with the naked eye in a few minutes; when it occurs in both drops the blood is of I. group, when in neither it is IV. group, and when in only one it belongs to the group of the serum where there is no agglutination. To test the titre of a blood serum the further step is taken of putting up drops of whole serum, half serum, quarter serum, one-eighth serum, and so on, up to about 1/250 serum; an equal volume of a 1 per cent. dilution of appropriate corpuscles is added to each, and the agglutinations noted under the low power of a microscope—they may extend nearly to the end of the series, or may only go down three or four places, the range varying greatly in different cases. As regards blood-stains, valuable work has been done by Schütze. The problem can be approached in two ways: (1) An extract of the stain can be used to agglutinate known corpuscles, or (2) the agglutinating power of a known serum may be varied by treating it with unknown stain. The first is often difficult to demonstrate, but when a blood-stain on a garment is cut up into fine fragments, and incubated in a sealed glass tube with a minimum of distilled water, the fluid obtained therefrom, when filtered free of any particulate matter, generally agglutinates appropriate corpuscles when the preparation is kept overnight in a moist chamber. The second method depends on the agglutinating power of a serum being finite; for instance, when a IV. serum which agglutinates II. and III. corpuscles is treated with II. corpuscles, it can still agglutinate III. corpuscles as before, but its action on II. corpuscles is lessened as shown by the titre that gives agglutination, or abolished entirely. In practice the blood-stain is cut up as in the previous experiment, but put up with known IV. serum instead of distilled water; after incubation as before the serum is drawn off and filtered and its power tested against known corpuscles. In the case of a IV. blood-stain no impairment of agglutinating power should be found, but in the case of the other groups it can generally be detected; for instance, if the titre of the treated IV. serum was unchanged for III. corpuscles, but very markedly diminished for II. corpuscles, it would be shown that the stain in question was of a II. blood. Negative evidence alone, as Dr. Martley was careful to point out, may be fallacious owing to the blood-stain having become inert from age or otherwise or from having been too small. When definite positive evidence was obtained and confirmed, in no case had it led him astray.

[1] THE LANCET, 1919, ii., 675.

THE EFFECTS OF ULTRA-VIOLET RAYS ON THE PARATHYROIDS AND CALCIUM METABOLISM.

THE biophysics of the ultra-violet rays is a territory in which many fields of research still lie fallow, and some useful spade-work has recently been done by two investigators, J. H. B. Grant and Frederick L. Gates, of the Rockefeller Institute,[1] which breaks fresh ground on the effects of the rays on certain endocrine glands. These workers exposed normal rabbits to the quartz-mercury arc lamp daily for periods of three to seven weeks and observed at autopsy the weight of certain endocrine glands in relation to the body-weight of the animal. Many controls were required because of individual and (in particular) seasonal variations in the gland body-weight ratio. Light-coloured or albino male rabbits, with ears shaved and backs clipped, were exposed to the unfiltered radiations of a quartz-mercury arc lamp for 30 minutes daily at a distance of 1 metre. The rays caused a marked erythema with some desquamation, followed by moderate pigmentation. At the expiration of the chosen period the animals were etherised and bled from the aorta. The weights of the several endocrine glands and the testes were recorded in milligrammes per kilogramme of body-weight. The changes in weight, per cent., compared with the normal controls are recorded. Leaving aside the somewhat fluctuating results in the other glands, the authors direct special attention to the considerable hypertrophy of the parathyroids. The percentage increase in weight from normal in these glands was at 3 weeks, 34·6; at 4 weeks, 51·1; at 5 weeks, 31·9; at 6 weeks, 27·7; and at 7 weeks, 14·1, the increase being most marked especially during the earlier periods of the experiment. The later decrease in weight the authors attribute to the protection afforded the rabbits by pigmentation. The increases in weight were due to a true hyperplasia of the parenchymatous tissue, as shown by microscopic examination. The examination of the calcium metabolism after exposure to the rays gave interesting results. The experiments showed changes in absorption and excretion of

[1] Proc. Soc. for Expl. Biol. and Med., vol. xxi., No. 5, February, 1924.

calcium and in the calcium level of the blood. It was found that the average blood calcium concentrations for the last three groups at autopsy—i.e., at 5, 6, and 7 weeks—were 12·7, 12·9, and 12·6 mg. per 100 c.cm. of serum as compared with an average of 11·9 mg. for 60 normal control rabbits. In another set of experiments rabbits were given increased exposures of ultra-violet light daily over a period of four weeks. These animals showed a relative increase of 32 per cent. in the parathyroid weight over the normal figures, and the blood calcium concentration rose from 11·9 mg. per 100 c.cm. of serum before exposure, to 12·2 mg. on the twelfth day, 13·5 mg. on the twenty-second day, and 12·9 mg. at autopsy. The normal relationship of the parathyroids to calcium metabolism is well established, but these experiments serve to relate the effect of ultra-violet light on calcium metabolism to the parathyroid glands. Whether the light acts primarily on the absorption and excretion of calcium and causes a rise of the blood calcium which results in a hypertrophy of the parathyroid gland, or primarily affects the glands themselves, remains to be determined.

VIRULENT SMALL-POX IN ONTARIO.

CONSIDERABLE interest attaches to the report of Dr. John W. S. McCullough, the chief officer of health of Ontario, on a recent epidemic of smallpox in the "border cities" of Ontario. A small epidemic of small-pox was present in Detroit in the early part of this year and, as was to be expected, a few cases developed in the neighbouring cities of Canada. These cases, however, were all of a mild character and occasioned no alarm, but about the middle of February an epidemic of malignant small-pox broke out in Windsor, Ont., following the death of a man suffering from an irregular type of the disease. This man, as the report states, was attended during his illness by several medical men of the highest reputation, none of whom believed that the patient was suffering from a communicable disease. During his illness the man was visited by many friends and relatives, and it was only when cases occurred subsequently in persons who had been in contact with him that the diagnosis of small-pox was definitely made. These cases were all of a particularly virulent and irregular type, and up to the early part of March the total number of cases which could be traced apparently to this source reached 42. Dr. McCullough states that it has not been possible so far to ascertain the source of infection of the original cases, but, whatever the source, the disease has been of a virulent form with a high mortality. In his report he brings out several points of importance in connexion with the epidemic. In the first place, the available evidence points to the first unrecognised case being one of sudden increase of virulence in the type of disease, and this Dr. McCullough believes was due to the fact that the person infected had never been vaccinated. Other points were the irregular character of the prodromal symptoms and of the rash. He divides the cases into three distinct types: (*a*) mild cases with history of an old successful vaccination over 12 years ago, also an occasional unvaccinated case who had been infected in Detroit; (*b*) severe semi-confluent and confluent cases which occurred solely in unvaccinated persons; and (*c*) hæmorrhagic cases which also occurred solely in unvaccinated persons and were all fatal. These latter cases, he states, were very difficult to diagnose even with the information that an epidemic of severe small-pox was present, and some of them showed a typical "lobster rash," as mentioned by Dr. Claude B. Ker in his book on infectious diseases. Dr. McCullough draws as his conclusion from the epidemic that the value of vaccination as a means of prevention has been proved, as it never was before, in an epidemic more severe than anything which Canada has seen since the Montreal epidemic of 1885. The deaths among unvaccinated persons suffering from the disease ran to 50 per cent. During the last week in February roughly two-thirds of the exposed population, or 50,000 people, were vaccinated. Dr. McCullough remarks with justifiable pride that there has probably never been a city in Canada which has been able to accomplish such a feat without the use of compulsory methods. The severity of the disease and the confidence of the people in their local health authorities made this possible. The value of the by-law providing for vaccination of children on entering school was shown in this epidemic by the absence of spread among the school population.

THE USE OF ARSPHENAMIN AFTER EXPOSURE TO SYPHILIS.

IN a review of the literature with a record of his own experience of the use of arsphenamin or salvarsan after exposure to syphilis, Dr. David L. Simon,[1] of Pittsburgh, abstains from employing the term "prophylaxis," as the question as to whether it is a prophylactic or curative measure is open to discussion. Pardoe-Castello, for example, with whom Dr. Simon is inclined to agree, maintains that it is a curative procedure in that it prevents the appearance of symptoms by curing the disease in the incubation period. The term "prophylaxis" is more applicable to modifications of Metchnikoff's method in which calomel or other spirochæticides are used directly after exposure to destroy the organisms in situ before they enter the blood stream. Local prophylaxis, however, is insufficient if used more than 12 hours after exposure, and it is in this group of cases that treatment by arsphenamin is most likely to be of value. Dr. Simon, who has employed his treatment for the last four years, confines it to persons who present themselves within 72 hours after exposure. The application of the method after this time is inadvisable, as there is a risk of giving insufficient treatment to a case in which intensive therapy is required. The cases treated had no previous history or evidence of syphilis, and all gave a negative Wassermann reaction. In most of the cases signs of active syphilis were present in the partner. The method consisted in the injection, every other day for three doses, of 0·3 g. neoarsphenamin dissolved in 10 c.cm. of distilled water. The Wassermann reaction was examined two weeks after the last dose and then at monthly intervals for four months. In the four cases which Dr. Simon records the Wassermann reaction remained negative, and no clinical evidence of syphilis was detected in persons so treated who had been kept under observation for periods ranging from four months to two years.

THE annual oration of the Medical Society of London will be given by Mr. Wilfred Trotter on Monday, May 5th, at 9 P.M., the subject being On Certain Minor Injuries of the Brain. The President, Dr. Herbert R. Spencer, will receive members and their guests at 8.30 P.M., and the oration will be followed by a conversazione.

THE fifth Maudsley Lecture of the Medico-Psychological Association of Great Britain and Ireland will be delivered at 3 P.M. on May 22nd at the Royal Society of Medicine, by Dr. John Carswell, Commissioner of the Scottish Board of Control. The title of the lecture will be "Some Sociological Considerations Bearing upon the Occurrence, Prevention, and Treatment of Mental Disorders."

THE exhibition of works of art by medical men, which is to be held in the Marcus Beck Room, at the Royal Society of Medicine, will be open from May 26th to June 14th. It is confined to works by Fellows and Members of the Society, and as the new movement is frankly an experiment, the space is very limited. The modest character was decided upon at the outset by those who, with the President of the Society, Sir William Hale-White, promoted the idea. Dr. Cuthbert Lockyer is acting as hon. secretary, and the selection and hanging will be supervised by Mr. Sydney Kendrick.

[1] Urological and Cutaneous Review, April, 1924.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

LXIX.—THE TREATMENT OF ACUTE AND CHRONIC PAIN.

MORPHIA is immeasurably the best anodyne drug we possess; if there were no drawbacks in its use it would be unnecessary to discuss other anodynes. However, since its disadvantages are well known and dreaded, the use of opium preparations is usually postponed as long as possible, and consideration of the efficacy in relieving pain of less dangerous drugs becomes essential. In selecting an anodyne drug the following points arise:—

(*a*) *The Point at which the Drug Acts.*—Aconite, belladonna, and cocaine act peripherally; cocaine, hypodermically, may bring relief, but only when the injection is made at the point of lesion. Morphia acts only on certain pain centres in the brain, and is therefore wasted in the time-honoured lead and opium lotion and in laudanum fomentations; rectal morphia suppositories are efficacious only so far as the morphia is absorbed and carried to the brain. The synthetic or coal-tar preparations, aspirin, phenacetin, antipyrin, and the like also act centrally. Counter-irritation, whereby the perception of pain at one point is distracted by irritation of another spot on the same nerve exchange must not be neglected.

(*b*) *Habituation and the Limits of Susceptibility.*—Unlike morphia, the synthetic remedies need not be increased to maintain a constant effect on the body. On the other hand, while the dose of morphine may be increased till the most severe pain disappears, there is a level of pain beyond the effective action of any of the other drugs. Headaches and rheumatic pains frequently yield completely to the synthetic anodynes; cancer pains are not so easily subdued, while inflammatory and ulcer pains may hardly be affected at all.

(*c*) *Habit Formation.*—Some drugs, as opium, cocaine, alcohol, produce a craving for more, with active discomfort when they are discontinued, and a loss of moral stamina. Coal-tar derivatives have no such effect.

(*d*) *Influence on Other Systems.*—Even in small doses morphia affects the respiratory centre, sometimes beneficially, as where it depresses needless cough, sometimes harmfully, as when phlegm resting in the bronchi fails to excite the clearing reflex. The fear that morphia in kidney disease may lead to cumulative retention is unfounded, for this drug is mainly excreted by the bowel, and may indeed be a most useful means of allaying discomfort in the last conscious days of a dying uræmic patient. The heart is not adversely affected by morphia, and advanced heart disease is no contra-indication to its use. On the other hand, constipation is a troublesome symptom in nearly all those who take morphia for a long period. On the whole, we are apt to fear the secondary effects of morphia too much rather than too little, and to forget that large doses of the synthetic products may cause sweating, rashes, and sometimes cyanosis from methæmoglobin formation. It should be remembered that when we relieve pain we not only make the patient more happy, but also reserve his strength and increase his resisting power. Pneumonia is a disease which lends itself to anodyne treatment.

Soporifics and Anodynes.

The centres governing sleep and pain being separate in the brain, we shall fail if, when pain is the cause of sleeplessness, we attempt to induce sleep with ordinary hypnotics. Morphia acts on both centres, but its anodyne comes before its soporific action; in fact, with the relief of pain the patient may become bright rather than drowsy. The coal-tar anodyne drugs are not directly soporific, but any relief of pain is likely to allow sleep to a normally tired person. The soporifics as sulphonal, chloral, and veronal are useless for pain but form valuable adjuncts to the true anodyne drugs, since they induce sleep as soon as pain is subdued. Other drugs hold an intermediate place. Luminal, sometimes used as a hypnotic, may give enough analgesia to put to sleep a patient even though he has pain. Dr. R. B. Wild has observed that a patient suffering from cancer wakes from a morphine sleep free from pain, which will only come on later; one who sleeps as the result of luminal wakes with his pain at full force.

The *duration of relief* varies with different drugs. Opium for some reason has the advantage even over its active principle morphia, and its effects certainly long outlast those of the synthetic drugs.

Morphia in Acute and Chronic Cases.

Though morphia is the best pain-killer we possess, owing to the fear of "habit" it is inapplicable in minor maladies and is inadvisable in major non-fatal illnesses likely to be protracted. It is justified when the illness is acute and painful, but likely to be short, or where a prolonged illness is leading to a certainly fatal termination.

In *acute cases* treatment by morphia for severe abdominal pain needs a rare discrimination, for it may mask diagnostic symptoms on the one hand, and on the other it may help by preventing spread of infection; while if it turns out there is no surgical lesion, unnecessary pain where morphia has been withheld is regrettable. In pneumonia another problem arises. Does the opium which eases the pain and allows sleep dull the respiratory centre sufficiently to cause risk? I think it does not, and I believe it to be one of the most efficient remedies in the first week of pneumonia, leaving the patient more fit to fight through when the crisis is at hand.

In *prolonged fatal cases*, as inoperable cancer, the question is rather one of the limit of size of dose to which the patient can attain. From the medicinal point of view there is no limit, though there are mechanical and financial disadvantages in continuous increase of dose. It is wise to withhold the drug within sufficient limits to keep an easily manipulated remedy in hand.

The Sequence of Drugs in Prolonged Fatal Cases.

The plan I aim at is to start with some coal-tar products, gradually reinforcing these by some morphine preparation. The duration of relief afforded by the synthetic drugs alone is very short and is prolonged by morphia in increasing doses. The synthetic drugs cannot be increased to any great extent since toxic symptoms arise, nor can they replace each other. It is well to keep the patient on coal-tar derivatives longer than is usually done. Of these, aspirin has become almost too well known to the lay public. Its high anodyne property combined with its low toxicity places it among the first of its class. But even aspirin may cause toxic symptoms, especially given with alkalies, as when it is washed down with soda water. Phenacetin, though weaker, acts wonderfully well in some cases. Antipyrin has the advantage of being soluble in water and can be given in mixture. A disadvantage of all these drugs when more than 15 g. is given is that profuse sweating may be caused and sometimes collapse. Blueness must be looked for if they are pressed. Fortunately this destruction of hæmoglobin is rarely serious, and even when blueness appears one may continue the drugs if caution is used. Powders of these preparations may be combined with powdered opium or Dover's powder, or pills and tablets of the two drugs taken together. Another useful combination is that of opium with a soporific drug, which, though useless alone, materially diminishes the amount of opium necessary to produce sleep—for example, a mixture containing t. opii, ℥ xv., pot. brom., gr. xv., and chloral hyd., gr. xv.

Counter-irritation in one form or another may be useful. Painting with iodine over the chest, blisters

over the head or body may be useful for a time. Spirit of cajuput in full doses may give great relief in a stomach cancer.

Alcohol has a definite anodyne action in doses not great enough to cause drowsiness or excitement, and may be continued far into the illness. Patients generally favour whisky and champagne; the possibility of the alcohol habit must not be forgotten in non-fatal cases.

Opium versus Morphia.

There are differences, largely manipulative and mechanical but also therapeutic, between opium and morphia. Morphia is more expensive. That it lends itself to hypodermic injection is a two-edged weapon; the patient is less likely to take to this method of medication himself, but if he does acquire the habit it is more likely to become confirmed. Morphia, hypodermically, acts quickly, and when one is attempting to keep the dose down, rapidity of action is important, for the patient is less likely to clamour for his drug in anticipation if he knows he can get easy relief when he really needs it. But it is not in every household that one can leave a hypodermic syringe to be used by a layman. When both are given by the alimentary canal, opium acts more slowly than morphia, but for a longer time. It is interesting to note that tincture of opium, the repeated dose of which in the British Pharmacopœia is ℥ v. to xv., is of the same strength of morphia (1 per cent.) as the morphine solutions of which the dose is ℥ x. to lx. On the whole, opium has the wider range, and it is wise to keep morphia in reserve unless circumstances specially favour its use. Of the solid preparations of opium, Dover's powder is especially useful in febrile conditions as the ipecacuanha reinforces the slight sudorific action of the opium, but sometimes the emetine causes nausea. Soap pill, which is used mainly for its analgesic action, has, like the compound ipecacuanha preparations, the advantage of suppression of the word opium. Omnopon, dose ½–¼ gr., is said to contain all the active constituents of opium without its resins and inert bodies; it is quite effective and useful in its tablet form, and may not upset the stomach as much as does opium. Of the fluid preparations, nepenthe and Battley's liquor sedativus are more pleasant than the official tincture, and given in slightly larger doses are as effective. The pharmacopœial liquid extract of opium, for which the opium is extracted with water, has the advantage over the tincture of not containing the resinous bodies which disagree with the stomach; it is an official preparation which deserves much more use than it gets. Opium in some form is irreplaceable in certain cases of pain, especially for malignant disease. Most medical men will agree with Dr. Robert Hutchison's recent words, "When our time comes . . . . I hope it may be your fate and mine to find ourselves in the hands of a doctor who is not afraid to use morphine."

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Special Articles.

BRITISH EMPIRE EXHIBITION, WEMBLEY:

HEALTH IN THE TROPICS.

I.

"THIS Exhibition . . . stands for the coördination of our scientific knowledge and a common effort to overcome disease . . . in many parts of the Empire." With these words the King referred to the share that medical men and women have in the problems of Empire when he opened the British Empire Exhibition on April 23rd, 1924.

The quotation "Good wine needs no bush" is misleading when used as a proverb; where the wine is applauded publicly as good it may not need the advertisement of the Bacchic bough, but as long as its virtues are ill-recognised, every opportunity for displaying them should be taken. And as was pointed out in these columns recently, the cause of disease prevention within the far-flung bounds of our Empire still needs much effort for the enlistment of public sympathy. Unless the public understand and coöperate, the medical profession cannot succeed in the task of making it possible for native and white man alike to live and move and have their being in each and all of our dominions unmolested by the terrible scourges of endemic and epidemic disease. Vast areas of our Empire, rich in promise, are as yet little, if at all, opened up for the service and well-being of mankind owing to the heavy toll which disease takes of those who would labour there.

Apart from the actual cure or prevention of disease, we have in many of our dominions the question of the means whereby it may be possible to bring medical aid within the reach of those thousands of men and women who are to all intents and purposes isolated amid vast tracts of unpopulated country. Here the health and well-being of countless British subjects depend as much on the engineer as on the medical man, and yet unless the medical man first make the country free from disease how shall it be possible for the engineer to construct railways? Or how shall the advent of the trader and settler, in sufficient numbers, render possible the provision of hospitals and all that is necessary for the establishment of self-supporting medical services? Government and charitable aid may do much, or even all, that is necessary for the clearing of a given tract of country from some specific disease, but it is the advent of a self-supporting population in the wake of the scientist which renders possible a general medical and surgical service, such as is indispensable for the well-being of a community. The provision of an adequate health service rests principally with those bodies, governments, local authorities, and commercial undertakings on whom rests the responsibility of voting the necessary money. This money may be voted either because there exists a brotherly desire to help others, or because the body concerned considers, with Celsus, that "health is wealth"—the two motives are generally concurrent. The medical services overseas would not have been starved for so long if people had, ere now, realised to the full the enormous increase of wealth that is possible if only the immediate sphere of their operations could be made healthy. The overseas officials and others would have their lives made much more enjoyable if in the countries where their work lay their wives and families could live wholesomely; then the establishment of a permanent community would be fully beneficial to the locality and the Empire.

The British Empire Exhibition will have served a great purpose if it brings home to the public the immense importance and need of proper medical and sanitary services, even if looked at merely from the motive of greater return for the effort and wealth that are expended in the various parts of our dominions. A brief survey of the exhibits in the Tropical Health Section of the exhibition appeared in these columns recently, and these are so much to the point and their arrangement so good that the only thing that need be said further in this connexion is that the lay public, and especially those with interests abroad, should be exhorted to go and see for themselves some at least of the factors which enable us to present health reports from the colonies as satisfactory as those which we publish regularly in THE LANCET. These reports make no pretence of being complete, but they are sufficiently representative to enable the reader to form the bright hopes of victory in the various great fights against disease.

In the Tropical Health Section of the British Empire Exhibition there are exhibits in connexion with 27 tropical diseases carefully grouped according to their ætiology, and all can realise what great progress the past 20 years has witnessed. For example, a campaign with its centre at the Medical School of Khartoum has practically cleansed the Sudan of bilharzia. Among the school-children of Dongola the incidence-rate has been reduced from 20 to 6 per cent., over 10,000 children being treated with intravenous injections of tartar emetic without a single mishap. Malta fever has been traced to its source, and, widely spread as it is, has been practically stamped out among the white population. Sir Leonard Rogers has attacked Asiatic cholera and considerably reduced the mortality; the reduction of the incidence-rate, however, is a matter which still requires vigorous hygienic and sanitary measures. Typhoid fever, which in the South African war caused a death-rate of 3·6 per cent. of our troops, took toll of but 0·006 per cent. of the British troops in France in 1917, and in this, as in many other diseases due to the typhoid-coli group of bacteria, proper hygiene and sanitation have reduced the rate of incidence to very small proportions. Ankylostomiasis, which caused such a high morbidity rate among miners and others, especially the workers in the St. Gothard tunnel, is now preventable. Scurvy and beri-beri, the latter of great economic importance to large employers of native labour, can now be overcome if the diet can be controlled. Sprue still gravely impairs the efficiency of Europeans in the East, and its ætiology still remains obscure, but research workers are hopeful of final success, the results of parathyroid treatment being encouraging. Rigorous segregation of the leper is having its effect in reducing the incidence of the disease, and the treatment of yaws by arsenical preparations brings the medical man into the realms of the miracle worker with countless natives.

Yellow fever and malaria, two diseases which in the past have taken such terrible toll of life and which seemed to be a barrier to so much enterprise, have, by the self-sacrificing labour of many workers, been traced to their source, and by means of simple measures carried out with great thoroughness large tracts of country are now practically safe. In Malay alone in 19 years 32,200 lives have been saved by the reduction of the death-rate following adequate drainage, and in the same area in seven years the spleen-rate dropped from 15 to 4 per cent.

Filariasis, dengue fever, and trypanosomiasis are yielding before determined onslaughts on the mosquito and the tsetse-fly; in regard to the latter in the northern zone of Principe the case-rate was reduced in five years from 45·8 to 1·0 per cent., and in Buganda in 1914 there were no deaths, as against 400 nine years previously. Last, but not least, by strict hygiene and the destruction of infected dwellings, combined with the intravenous injection of antimony, the death-rate from kala-azar has been reduced in several areas by over 50 per cent.

These are but a few illustrations of the way in which medical science has in the past few years rendered comparatively healthy and habitable a tropical life which commenced formerly for many with the first step towards an early grave.

We publish this week the most recent notes available on the public health of Jamaica and the Falkland Islands, and in each case the story by comparison with previous official documents is one of progress.

WEST DENBIGHSHIRE HOSPITAL.—This hospital, which is in course of construction at Colwyn Bay, will soon be completed and will have 47 beds for surgical and medical cases, together with private and maternity and children's wards. The Red Cross Society gave £10,000 provided another £10,000 were raised locally, and this has been done. In addition subscriptions amounting to £4000 were obtained and these sums will probably suffice for the actual building. A further sum of £1500 has been subscribed towards the equipment.

SIGHT AND SCHOLARSHIP.

REPORT BY THE COUNCIL OF BRITISH OPHTHALMOLOGISTS.

A MEMORANDUM has been issued by the Council of British Ophthalmologists dealing with the standards of vision desirable for candidates for scholarships and teacherships under local education authorities. In the interests of the community and of the individual, the memorandum runs, it is important that scholarships and teacherships should not be granted to candidates suffering from such ocular defects as may be aggravated by long-continued study and lead to inefficiency or incapacity later in life. It is, therefore, advisable to establish, if practicable, standards of vision which shall exclude unsuitable candidates. At the same time standards should not be fixed so high as to exclude any appreciable number who might in practice prove fit. The average age of entry upon a junior county scholarship is 11 years; the holder is transferred to a secondary school for five years. Supplementary scholarships are awarded at about 13 years of age, and are held for three or four years at a secondary school. Intermediate scholarships are granted at about 16 for two or three years. Senior county scholarships are granted at the age of 18 years, and are tenable at a university for three or four years. Prospective teachers undergo training at a college between the ages of 17 and 20 years.

Errors of Refraction and Their Effect.

Myopia.—The errors of refraction of most importance in reference to education are myopia and high degrees of astigmatism. Myopia is found in about 10 per cent. of children at the leaving age in elementary schools, and in about 10 per cent. of these myopes it becomes a serious defect; in the remaining 90 per cent. of the myopes the defect causes little inconvenience apart from the necessity for wearing glasses. It is generally agreed that in many persons prolonged near work on fine objects under comparatively poor lighting is a cause of myopia, or aggravates existing myopia, especially when astigmatism is present. If preventive measures are to be initiated, and the selection of individuals likely to become unsuitable for such special duties as teaching is to be avoided, it is necessary to determine at as early an age as possible the unfavourable cases. In elementary schools cases of myopia of considerable degrees are found in infants under 7 years of age, but the first routine test of vision is not made until the children are about 8 years old. Of the cases examined at this age and sent to clinics, some with diminished visual acuity and considerable myopia are transferred to myope classes; others are ordered glasses and return to school, but usually not sufficient effort is made, either at the clinics or at the schools, to warn parents regarding the future of these children. At the age of 11 the child either is left to continue his education in the elementary school until 14 years old, or goes, frequently by means of a scholarship, to a school giving higher education of a more intensive kind. Successful scholarship candidates are then medically examined, and the first administrative difficulty arises in the elimination of those to be deemed medically unfit.

A child of 11 with 4·5 dioptres of myopia would by most authorities be deemed unfit for a scholarship. He must continue at the ordinary school or, exceptionally, go to a myope class. A child of this age with 1·5 dioptres of myopia would be deemed fit for a scholarship. Between these limits of 4·5 and 1·5 dioptres of myopia a decision has to be given on many difficult cases. Many young myopes have good visual acuity with correcting glasses, and apparently healthy fundi, yet their defect is often progressive. The determination in all young myopes of the rate of progression is most important. The previous history, however, is often defective. It may be known that the child has worn concave glasses for some time, or,

at best, there may be a record that vision was tested at the age of 8 and found normal. More accurate records would be of great value, and it is desirable that such should be kept.

Astigmatism of considerable amount may cause want of efficiency, especially in those engaged in an occupation such as teaching, which involves much close or fine work. With very high degrees of this defect, visual acuity, even with correcting glasses, is usually subnormal.

Recommendations of the Ophthalmic Committee.

The experience of the ophthalmologists is embodied in the following recommendations:—

Visual Acuity.—In all candidates for scholarships and teacherships the visual acuity, with correcting glasses, should be not less than 6/9 in the better eye.

Myopia.—A child of 11 with less than two dioptres of myopia in either eye should be passed. A child of 11 with more than two and less than three, on probation, should be re-examined every six months. A child of 11 with three or more dioptres of myopia in the better eye should be rejected for scholarship training. At the age of 15 those with more than four dioptres of myopia in the better eye should be deemed unfit to train for the teaching profession. Entrants to training colleges, who are, as a rule, about 18 years of age, with more than five dioptres of myopia in the better eye should be rejected.

Astigmatism.—Simple myopic astigmatism exceeding three dioptres in the better eye should be a cause of rejection of candidates both for scholarships and for training as teachers. In cases of compound myopic astigmatisms, unless the myopia is stationary, astigmatism of even two dioptres may be a cause of rejection. Cases of hypermetropic astigmatism should be rejected only if visual acuity, with correcting glasses in the better eye, is less than 6/9.

Hypermetropia.—This defect should not be a cause of rejection unless vision, with correcting glasses in the better eye, is less than 6/9.

Special Cases.—If there is only one eye, or if there is only one useful eye, the other being amblyopic from non-progressive disease, which in no way affects, or is likely to affect, the good eye, the case should be judged on the condition of the good eye. In the case of candidates for university and technical senior scholarships, or those intending to specialise as teachers of certain technical subjects, greater latitude may be allowed after consideration of special circumstances as to nature of work, the condition of the candidate's eyes in other respects, &c.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Co. Galway Health Scheme.

A SCHEME brought forward by the Co. Galway Board of Health for the reorganisation of the health services of the county has roused great opposition among the members of the medical profession in the county. It is proposed to reduce the number of dispensary districts from 44 to 28 by a process of amalgamation and rearrangement, and to reduce the number of medical officers by 11. At a representative meeting of the Co. Galway medical practitioners held last week in the Railway Hotel, Galway, at which Dr. T. B. Costello, Tuam, presided, a resolution was adopted declaring the scheme absolutely unworkable from the medical point of view for the following reasons: (1) the dispensary areas in the Co. Galway are at present too large, and as comparable with other districts in Ireland they are almost double in rural population; (2) the amalgamation will increase the number of "red ticket" cases, lessen the attention that people in rural districts can get, increase the necessity for hospital accommodation, and place the people in grave danger in times of epidemics. Resolutions were also passed to the effect that an economical provision of seven cottage hospitals or clearing stations is necessary in certain areas to deal with emergency work, and to protest against further schemes of amalgamation for any county until the matter is dealt with on a national basis by well-considered legislation. A committee was appointed to watch over the interests of the medical practitioners of the county.

The Unworkable Size of Some Dispensary Districts.

Dr. T. Hennessy, medical secretary of the Irish Medical Committee, said it was always considered in Leinster and parts of Munster that any district with an area of more than 25,000 statute acres and a population of between 2000 and 3000 could not be efficiently worked. In all the schemes that were ever considered in Dublin, the one thing that everybody agreed upon was that in Connacht most of the districts were vastly too big. They had districts of 40,000 and 60,000 statute acres, with populations running up to 6000. No man was supposed to do more than 2000 people in an urban area, where they were all close together. When they had a bigger population scattered over 60,000 acres they could only do rush work. They would in these circumstances see their patients once, but not a second or third time. As a matter of fact, one dispensary district in Co. Galway—namely, Oughterard, has an area of 70,085 acres, which is supposed to be adequately attended by one medical officer. Rounelstone, with 104,753 acres, has two medical officers: Spiddle, with 63,435 acres, Athenry, with 56,440 acres and a population of 5916, Bullaun, with 55,862 acres, and Lettermore, with 44,555 acres and a population of 8030, have one each. It is manifestly impossible that the people scattered over these enormous areas, much of which, in the western part of the county at any rate, is bog and mountain without roads, should receive adequate attention under present conditions. To render the facilities for medical attention even more imperfect than at present is a retrograde step.

The Asylum Strike in Co. Donegal.

The Committee of the Tirconaill Mental Hospital having been able to obtain a staff of attendants to take the place of those who recently went on strike, has taken the step of dismissing all those who ceased work. At the same time the committee reserves power to deal as is thought best with all applications for re-employment. It is said that this dismissal abrogates any pension rights the late attendants may have had.

Irish Medical Association.

The Council of the Irish Medical Association has nominated for re-election as President and Vice-President of the Association respectively, the present officers, Senator W. O'Sullivan, of Killarney, and Prof. F. C. Purser, of Dublin.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Annual Congress of the Ophthalmological Society of the United Kingdom.

THE Annual Congress of the Ophthalmological Society of the United Kingdom is being held this week in Glasgow under the presidency of Dr. A. Maitland Ramsay. The choice of Glasgow for the Congress coincides appropriately with the centenary of the Glasgow Eye Infirmary, to which some reference has already been made in THE LANCET. The proceedings extend over three days, May 1st to 3rd, and the discussions take place in the Department of Zoology of the University, which also houses the scientific exhibition in connexion with the Congress. By the time my letter appears in print the Congress will be in full swing. The programme is an extensive one, and should be productive of much interesting material. After the members have been welcomed by Sir Donald MacAlister, the morning of the 1st is devoted to a discussion of the physiology and pathology of the pupil

reactions, to which Dr. Edwin Bramwell contributes. A series of short papers on various subjects occupy the Society in the afternoon, and in the evening the members dine together. On the morning of May 2nd a clinical meeting is being held in the Eye Infirmary. After the business meeting in the afternoon, a reception is to be given at the University by the Principal and Lady MacAlister. The evening session is devoted to a number of short papers and demonstrations. On the morning of May 3rd a third series of short papers will occupy the attention of the Congress. An interesting museum has been collected for the Congress. In addition to purely clinical exhibits, Prof. T. H. Bryce has provided specimens showing the development and anatomy of the eye, and Prof. Graham Kerr a series of microscopic specimens illustrative of the comparative anatomy of the eye.

Edinburgh Post-graduate Class in Insulin Therapy.

It was recently arranged to hold a post-graduate class in the Royal Infirmary during the first complete week of each month for the study of insulin therapy, particularly in relation to the use of insulin by the general practitioner. A beginning was made in March in the wards under the care of Prof. Meakins. The class, which was limited in numbers to ten, was fully attended and met each morning for a period of two hours. The more theoretical aspects of the disease were discussed and at the same time the opportunity was given for studying the severe cases under treatment in the wards. One afternoon was spent with Dr. Murray Lyon at the Diabetic Out-patient Clinic, where many of the milder cases are treated as out-patients and former ward cases kept under observation. These patients were of special interest to practitioners, for here it was conclusively demonstrated how effective treatment can be when intelligent coöperation between patient and physician exists. These diabetics are supplied with such diet tables as they require, and are instructed how to test their urine and administer their own insulin with the most satisfactory results. Emphasis was laid on the fact that diabetes can be thoroughly treated without resort to blood-sugar estimations, and these cases demonstrated that a more practical and even more effective control can be maintained by frequent examinations of the urine. Attention was directed also to the careful construction of diet tables. Much has been accomplished in the clinic by the use of standard diet tables, suited to the varying types of diabetics met with, and this in itself has done much to simplify treatment by the busy practitioner. Two afternoons were spent in the biochemical laboratory of the Royal Infirmary, where demonstrations were given of a simplified method of estimating the blood-sugar which could be readily carried out by the practitioner should he so desire. Instruction was also given in a new and more accurate method for the estimation of sugar in the urine. The class should prove of the utmost value to practitioners in the handling of diabetic cases in general practice.

Necessitous School-children.

There are two official bodies on whom the care of necessitous school-children is a charge—the education authorities and the Poor-law authorities—and while their objects to some extent overlap, the administration of these two bodies is entirely separate. On the part of the education authorities there has been recently some doubt as to the scope of the rights and duties of each, and to make the present position clear the Scottish Education Department issued on April 14th a revised circular (No. 67) on the feeding and clothing of necessitous school-children, and the Scottish Board of Health have thought it desirable to publish simultaneously a short summary (circular No. IV., 1924) on the present legal and administrative position from the point of view of the Poor-law authorities. The crux of the problem lies in this, that while it is the statutory duty of the education authorities to provide efficient education, a hungry stomach and a receptive brain are physiologically incompatible, and therefore the education authority must undertake to provide equipment and service for the preparation and supply of meals to pupils. In certain specified cases only is the cost of the meals defrayed out of the education fund. The primary concern of the Poor-law authorities on the other hand, is the relief of destitution, and thus where the persons to be relieved are persons of school age, both sets of authorities have obviously a common status. These circulars contain helpful advice as to the most efficient method of obtaining coöperation towards the common goal—namely, the health and development of the children. It is suggested that where relief is applied by the Poor-law authority the education authority might supply the accommodation service and cooking apparatus, and in point of fact in certain areas, as, for example, in Glasgow, an arrangement of this sort has been in operation for some time with excellent results. The principles of coöperation which are outlined in the circulars should be helpful to the efficient administration of the statutes.

BUCHAREST.

(FROM OUR OWN CORRESPONDENT.)

Improvement of the Workmen's Insurance System.

A CONGRESS of Rumanian physicians was held lately in Czernowitz, the capital of Bukovina, a part of the former Austro-Hungarian empire. The chief topic of discussion was the improvement of the workmen's insurance system, which in its present form leaves much to be desired. The Government was represented by the Minister of Public Welfare and Health, Mr. Marzescu, who opened the Congress with the statement that the Government has been and always will be ready to make monetary sacrifices in the interests of public health and welfare. The Congress discussed the ways and means of improving the system of workmen's compensation in Bessarabia and the old kingdom of Rumania, where at present insurance is at a very primitive stage, as the Minister admitted. He stated that, on his proposal, a law had been drafted providing that all persons seeking relief at mineral springs, inside or outside the country, should, regardless of their financial status, obtain a reduction of 75 per cent. in the railroad fare within Rumania. The necessity for taking the baths or staying at a climatic resort has to be certified by an official physician, in towns by the medical officer, in villages by the district physician. Members of the workmen's insurance companies pay no fare when going to the baths for their health.

Difficulties of Country Practice in Bessarabia.

Dr. Stefanescu, chief medical officer of the Province of Bessarabia, spoke about the great shortage in the number of country doctors. He said that in more than 100 districts the position of district physician is vacant. In Bukovina, out of 40 districts these positions are filled in 18 only. This is largely due to the small salary paid by the State. Energetic efforts will be made by the health officer of Bukovina and Bessarabia to secure salaries large enough to maintain a physician and his family. At present the cities are crowded with doctors, many of them living a life of poverty rather than become district physicians. The risks to public safety in these territories are also largely responsible for the shortage of rural doctors. Mr. Marzescu stated that on his return to Bucharest his first task would be the solution of this important problem. Several weeks ago a new disease developed in Bessarabia, which resembles malaria, but is caused by a hitherto unknown fly, and not by mosquitoes. The bite of this fly causes a febrile disease that lasts from four to six days and is accompanied by nasal bleeding and a petechial eruption on the lower extremities, chest, and abdomen. Because of the lack of physicians there have been about 16 fatalities, all of which could have been

prevented. In districts where physicians have been available not one patient succumbed. This lesson cannot fail to impress the Government and will result in raising salaries sufficiently to attract younger physicians to settle in the country. Luckily the epidemic is over, and it is hoped that next year there will be no recurrence.

The Rise of Infantile Mortality in Transylvania.

The deplorable condition of public sanitation in Transylvania, the largest province of Rumania, is evidenced by the request of Dr. Nicolau Popovici, chief medical officer of the county of Bihar (at present also the political prefect of the county), for help from the Government. He states that unless active and energetic measures are taken the mortality in the villages, already most serious among the children, will rise to an alarming extent. The number of births is decreasing. In July 49·87 per cent. and in August 57·21 per cent. of the new-born children died. This high mortality-rate is partly due to epidemic diseases and partly to the great number of drink-shops, which is still increasing. In Vaskoh, a village with 888 inhabitants, there are 17 brandy shops. Brandy is cheap, a litre (two pints) selling for 35 or 40 lei, approximately 10–12 pence. Besides this almost every farmer brews his own plum brandy. In consequence alcoholism is rampant and the majority of babies are weakly and suffer from rickets. Dr. Popovici recommended that the administrative committee of the county should send a memorandum to the Government to urge the refusal of licences for the sale of brandy.

Tuberculosis Exhibition in Bucharest.

A tuberculosis exhibition will be held in Bucharest in the course of the year. The National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organisation Society have decided that, in view of the widespread interest in the subject of consumption, as shown by the working of the anti-tuberculosis associations formed in all provinces of the country, and the increasing desire to provide better conditions for consumptives in many cities, it is time to gather together an exhibition which will show just what has been accomplished in this country in fighting the great white plague. The exhibition will be so arranged that it will present, through diagrams, photographs, and models, a picture of the progress being made in the fight against tuberculosis, and at the same time will show the need for further effort.

Gastric Disorders and Diabetes.

Prof. Dr. I. Constantinescu, of Bucharest, said at a recent meeting of the Medical Society that in not a few cases of diabetes gastric symptoms were common, and these were usually considered to be the consequences rather than the cause of the diabetic condition. In a case treated several years ago, however, for atony of the stomach, after the employment of lavage the patient improved so much that Dr. Constantinescu resolved to investigate the relationship of stomach disorders and diabetes. Since then he has treated the stomach in 13 cases of diabetes. Seven of these have been under observation for more than two years. In all a definite catarrhal process was found. All of them were helped by lavage. The sugar content of the urine was reduced and the patient's general health always improved. In almost all of the cases there was an immediate reduction of the thirst and of the polyuria. In all of them, too, a good but not voracious appetite was noticeable. Symptoms of restlessness and bad temper disappeared promptly.

THE BRITISH EMPIRE CANCER CAMPAIGN.—A meeting in support of the British Empire Cancer Campaign will be held under the presidency of the Lord Mayor of London at the Mansion House on Tuesday, May 6th, at 3 P.M. Among the speakers will be the Duke of York, the Rt. Hon. J. H. Thomas, Secretary of State for the Colonies, the Rt. Hon. John Wheatley, Minister of Health, Sir John Bland-Sutton, P.R.C.S., and Prof. W. S. Lazarus-Barlow.

Correspondence.

"Audi alteram partem."

SYMPTOMATIC SCIATICA AND SACRO-ILIAC DISEASE.

To the Editor of THE LANCET.

SIR,—In an annotation on this subject in your issue of April 19th (p. 815) one point seems to me to require amplification. It is there stated: "Of late years much attention has been given in the United States to the diagnosis and treatment of sacro-iliac disease; many more cases have been reported in that country than in Great Britain, where definite arthritis of the joint *from whatever cause arising* is comparatively rare." The italics are mine, and I emphasise these words, for in my experience traumatic arthritis of both lumbo-sacral and sacro-iliac joints—more particularly the latter—is not comparatively rare in this country. It is, indeed, extremely common; though, unfortunately for the victims, it is rarely diagnosed. Traumatic arthritis of these joints is a clinical entity, easily recognisable, and, except in the more severe forms, easily alleviated and often cured.

Lumbo-sacral strain is usually a more or less chronic condition, and is due to an accentuation of the normal lumbar curve (marked lordosis), or to an obliteration, even it may be to a reversal of this curve leading to the "flat-back" and vertical sacrum. The former condition, so far as I know, is nearly always postural and is rarely "acute," except in lawn-tennis players with a vigorous over-head service. The latter is usually postural, though acute onset sometimes follows prolonged anæsthesia when the lumbar spine has not been adequately supported. Either condition may provoke very severe backache; and, particularly the latter, may be a cause of intense pain "referred" down the legs. A glance at the patient's back, sitting first, then standing, will reveal the possible cause of the trouble. Whether this is the true cause or not can readily be proved in the "lordosed" case by examining the patient prone and accentuating the curve first by raising the extended legs backwards and then by raising the trunk. In the "flat-back" variety the examination is made recumbent, the legs and the trunk being raised as before. Increase in pain is diagnostic in the absence of a sacralised lumbar vertebra, enlarged transverse processes of the fifth lumbar vertebra (so that they form a false joint with the crest of the ilium), fracture of a transverse process, or arthritis due to disease (tuberculosis or osteo-arthritis)—all of which can be excluded by X ray examination. Relief from symptoms can be secured by adequate back support.

The other possible cause of pain as the result of the examination is sacro-iliac strain. This may be acute or develop slowly. Great force is not essential to precipitate an acute attack; a slip while stepping out of a bath or even pulling out the bottom drawer of a chest of drawers is adequate. Moving or throwing a heavy weight, e.g., receiving a heavy sack of coal on the back, or any fall, e.g., a slip on the stairs, will often produce a severe attack. Diagnosis is simple. The patient stands with the trunk inclined forwards, the hip and knee of the affected side flexed, the toes only resting on the ground. He usually places one hand in the small of the back for support, and there is tenderness near the "dimple" in the region of the sacro-iliac joint. The lumbar spine is held rigid with a concavity to the injured side. Sitting, the position is similar, but the weight is supported chiefly on the tuber ischii of the unaffected side. Recumbent, abdominal palpation will often reveal the presence of "Baer's sacro-iliac point." This is a point of great tenderness two inches down from the umbilicus on a line drawn from this point to the anterior superior spine.

How many patients, one wonders, have been subjected to operation for appendicitis or have been treated for "ovarian pain" on account of tenderness

over this point without securing relief. If, when this "point" is discovered, the tenderness is relieved by pressure backwards on the anterior superior spine, or forwards on the posterior superior spine of the ilium, diagnosis is certain. This sign is not invariably present and then examination has to be prolonged. The leg on the unaffected side is raised with the knee fully extended (as in testing for sciatica), until the limit of painful movement is reached. The range of movement is then compared with the injured side. When the limit of painless movement is reached the foot is dorsiflexed. If this increases pain we are probably dealing with a case of true sciatica; if not, with one of sacro-iliac strain, the strain being accentuated by the pull of the hamstrings on the tuber ischii, which tends to rotate the ilium backwards on the sacrum. The sacro-iliac joint, by the way, is not a synchondrosis as usually taught, but a diarthrodial joint with a definite joint cavity, which proves the possibility of movement taking place.

If the movement described increases pain, the examination can be checked by placing the patient on the sound side, and then by pressing the ischial tuberosity forward with one hand while pulling the anterior superior spine backwards with the other. But, less frequently, the strain may be due to movement beyond the normal limit of the joint in the opposite direction. Examination must then be made by mobilising the joint in the opposite direction, which is done with the patient on the sound side. The knee is flexed and the hip is hyper-extended backwards, counter-pressure being exerted on the tuber ischii. The **Y**-shaped ligament then pulls the anterior inferior spine of the ilium downwards and rotates the body of the ilium forwards, thus laying strain on the sacro-iliac joint. Manipulation of the sound side will often produce pain on the injured side in severe cases, as it is possible thus to move the sacrum on the ilium, instead of the ilium on the sacrum as in the manipulations described.

If pain is elicited as the result of both forward and backward rotation of the ilium we are dealing with an arthritis—presumably a synovitis—of the joint; if movement in one direction only causes pain, the presumption is that a "locking" has taken place and that manipulation in the opposite direction will undo it. This is the type of case that the osteopath and bone-setter can relieve so readily. Manipulation is always worthy of a trial. But, failing this (or even if it is successful, in order to render recovery permanent), relief of symptoms obviously must depend on support of the affected joint. Fortunately, nothing nearly so drastic as the treatment suggested in your annotation is usually required. An ordinary cricketing belt, applied horizontally round the body below the anterior superior spines, will suffice in the milder cases, as also in those in which manipulation has been successful. (It can be kept in place by fastening it on to a corset.) If this is inadequate, a plate must be inserted under the strap over the sacrum and suprapubic regions. A more rigid support is given by prolonging the abdominal plate at both sides, so that a bar projects outwards, and thus secures a firm antero-posterior grip below the anterior superior spines. If made of metal a very secure grip can thus be secured under the strap, particularly if the abdominal plate is prolonged downwards so as to grip the pubic symphysis at the same time. Naturally, the longer the back-piece the more secure is the support. The disadvantage is that each case presents individual characteristics, and no "standard pattern" is possible. Each case has to be fitted separately; it is for this reason that many of the sacro-iliac supports, as made in America, fail, and, so far as I know, American surgeons do not realise the importance of the projections mentioned from the sides of the abdominal plate.

Adequate support of the type mentioned will often give relief, even if X ray examination reveals the presence of definite osteo-arthritic change which, in my experience, is very rare in this country—as your annotation remarks. Some patients require support in bed. The belt cannot be worn as it slips so easily. A binder, of the maternity type, is then applied over the lower abdomen and the upper half of the thighs, and is fastened as firmly as possible. Over this a webbing strap is applied in the position already indicated as firmly as possible, and is secured in place by safety-pins.

The question then arises, Are these cases common? I can only say that I fit anything from 70 to 100 supports a year, and I should judge that less than 5 per cent. are rejected by patients. I think this is proof positive of the value of the treatment, as no one would wear a contraption such as I have indicated unless it afforded very material relief. If only the eyes of the profession could be opened to the existence of this fertile source of pain and disability, not only would much injustice be avoided in industrial accidents, but an inestimable amount of needless suffering and disability would be alleviated if not entirely relieved.

I am, Sir, yours faithfully,

JAMES MENNELL.

Park-crescent, Portland-place, W., April 21st, 1924.

MEASLES AT ADVANCED AGE.

To the Editor of THE LANCET.

SIR,—The following case is of interest owing to the advanced age of the patient.

Mrs. ——, aged 83, was admitted here on April 4th suffering from senility and bronchitis. She was very ill and was placed in a small ward in which there was a patient who was recovering from measles. On April 13th she developed a typical attack of measles, and she died on April 17th. A daughter volunteered the information that her mother had never had measles previously.

Is there any record of measles in a patient older than this?—I am, Sir, yours faithfully,

J. BASIL COOK, M.D.

West Middlesex Hospital, Isleworth, Middlesex, April 19th, 1924.

SCHICK IMMUNISATION IN DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—Dr. C. C. Okell and his collaborators, in their paper upon Diphtheria Outbreaks in Institutions in your issue of April 19th, refer to a previous article of mine which appeared in the *Medical Officer* (March 4th, 1922). Dr. B. A. Peters, in the same issue of THE LANCET, deals with Schick immunisation as applied to the nursing staff of the infectious diseases hospital of which he is in charge. May I state as briefly as possible my own experience of the Schick test as applied to the purposes detailed by your contributors.

Since 1921 I have consistently employed a combination of swabbing (of throat and nose) and the Schick test on the appearance of diphtheria in scarlet fever wards. I am able fully to support the statement of Dr. Okell and his colleagues that by such means the situation can rapidly be brought under control. Swabbing and the Schick test—without virulence tests—serve to divide the ward population into four classes as against six in Dr. Okell's paper. I have found that in a fever ward this is commonly sufficient. On occasion, however, we have also sought the aid of virulence tests when further discrimination seemed desirable. In a fever hospital, too, where patients in the ordinary course only stay for relatively brief periods, I have usually considered it preferable to afford the immediate protection of antitoxin to the Schick + swab + group. Active immunisation by toxin-antitoxin mixture has, however, been offered to and accepted by adult patients who had still some time to spend in hospital before discharge. With the above differences the disposal of the various groups is very similar to that recounted in the paper cited. I should add that the nursing staff working in the ward is always included amongst the "swabbed" (their Schick records are already available), and that on more than one occasion the source of infection has been traced to a Schick-negative-carrier nurse whose organisms have subsequently proved to be virulent.

With regard to the protection of the nursing staff, since the beginning of 1922, every nurse has been Schick tested on entry. During 11 months of 1922 and the whole of 1923 only naturally immune (Schick-negative) nurses were allowed to work in diphtheria wards. Although this procedure afforded a very drastic test of the value of the Schick negative reaction, it became necessary, in order that Schick-positive probationers might enter diphtheria wards, to produce active immunity amongst this group. At the present moment every member of the nursing staff is either naturally immune, or has been, or is in the process of being, actively immunised. In round numbers one-third of the nursing staff has been found to be Schick-positive; thus only one-third requires active immunisation if the validity of the negative Schick test be accepted. The following figures are of some interest:—

Year.	—	No. of cases of diphtheria admitted to wards.	No. of cases of clinical diphtheria amongst nursing staff.
1921	No discrimination of staff by Schick test.	1301	14
1922	Discrimination by Schick test commenced Jan. 28th.	1090	7
1923	Discrimination by Schick test throughout year.	1409	4

In 1923 the four nurses who contracted diphtheria were all Schick-positive probationers, who were working in scarlet fever wards, and, in the well-known manner of junior probationers, contracted the disease soon after entry. There have been instances where I have thought that the test had failed us, but I have had, on investigation and re-testing, to conclude that the technique or recording or toxin was at fault, and that the test itself is a true index of susceptibility or otherwise to *clinical* diphtheria. In this belief I am greatly supported by the critical human experiments of Guthrie, Marshall, and Moss.[1] In my experience, no indubitably negative Schick reactor has ever contracted clinical diphtheria as distinct from a transient tonsillitis associated with the presence of morphological diphtheria bacilli or a frankly "carrier" state.—I am, Sir, yours faithfully,

E. H. R. HARRIES,
Medical Superintendent, Birmingham City Hospital, Little Bromwich.

April 24th, 1924.

To the Editor of THE LANCET.

SIR,—The points raised by Dr. C. W. Hutt in your issue of April 26th were emphasised by myself two years ago in papers published in THE LANCET (1922, i., 312) and in *Public Health* (May, 1922). I pointed out that the age-groups which gave the greatest number of Schick-positive reactions exactly coincided with the age-period when the incidence of clinical diphtheria is most marked—viz., 2–5 years. Furthermore, I suggested that the public health authorities, through their child welfare and school medical services, were in a position to test and immunise that portion of the population most susceptible to diphtheria.

The Schick test and toxin-antitoxin immunisation constitute one of the most notable recent advances in the sphere of preventive medicine, and the results, which are on record, obtained during the last ten years in New York sufficiently demonstrate its value. At any rate, it is not too much to say that it is possible that the thorough systematic adoption of toxin-antitoxin immunisation against diphtheria would result in a great yearly saving of child life. May one hope that, without more ado, those who specialise in preventive medicine will use their organised services to employ an agent which is potent to prevent diphtheria? I am, Sir, yours faithfully,

Bedford-square, W.C., April 28th. T. E. DICKINSON.

[1] Experimental Inoculation of Human Throats with Virulent Diphtheria Bacilli, J. Hopkins Hosp. Bull., 1921, xxxii., pp. 369–78.

AURAL VERTIGO.

To the Editor of THE LANCET.

SIR,—Dr. E. Hobhouse in his interesting letter on this subject, in your issue of April 19th, expresses surprise that in the recent discussion on vertigo at the Royal Society of Medicine "no one pointed out that perfect equilibrium is possible when the semicircular canals have been completely destroyed or rendered functionless by disease or operation." For equilibrium the labyrinths of the two sides should be equally active or equally functionless, and in the most typical cases of aural vertigo there is a unilateral lesion with preponderance of the sound labyrinth over the diseased one. The vertigo would probably come to an end if the healthy labyrinth were rendered functionless to the same extent. This might be imitated to some degree by the administration of a drug capable of diminishing the sensitiveness of the healthy labyrinth. Such a drug we have in quinine (and the salicyl compounds), and doses so small as hardly to affect the auditory part of the labyrinth can produce the desired sedative effect on the equilibrial part. In proof of this I have treated many cases of aural vertigo from unilateral lesions of the labyrinth with small doses, say one-half or even one-third of a grain of sulphate of quinine, almost invariably with relief from the vertigo. In proof that this result is due to a sedative action on the sound labyrinth I have measured the length of time necessary for the caloric induction of nystagmus and found that after treatment by means of quinine the time necessary was considerably longer than before and the relief from vertigo was due to the approximation to an equalisation of the action of the two labyrinths to which I referred in my contribution to the discussion (THE LANCET, March 1st, 1924, p. 446).

I am, Sir, yours faithfully,
JAMES DUNDAS-GRANT.

London, W., April 28th, 1924.

ANTILEUCOCYTOLYSINS.

To the Editor of THE LANCET.

SIR,—I have read with great interest the article by Dr. Ivan Manoukhin in your issue of Jan. 26th. The "self-defensive reaction" which he there describes in the treatment of malaria could, presumably, be used for other diseases. On one point I should like more information, however, and that is the function of the antileucocytolysins, and of the organ that forms them—the liver—in the defences of the body. I gather from the article that they have a defensive rôle which comes into play at a later stage than that of the leucocytolysins, but their mode of action at this later stage is not made clear.

I am, Sir, yours faithfully,
C. LUNDIE.

Thaba 'Nchu, S. Afr'ca, March 15th, 1924.

HYMENOLEPIS NANA AND *H. FRATERNA*.

To the Editor of THE LANCET.

SIR,—Joyeux, in 1920, after a survey of most of the evidence, arrived at the conclusion that *Hymenolepis nana* of man and *H. fraterna* of rodents, though apparently indistinguishable in all characters, both of the adult worm and of the egg, are yet two distinct *physiological* species. More recently, however, two Japanese investigators, Saeki and Uchimura, have denied the validity of the experiments described by Joyeux, and affirm that it is possible to infect mice with *H. nana* eggs. The original papers of these two Japanese investigators not being easily accessible, and the brief abstracts available providing little or nothing of that detailed information which is so essential in these matters, I have recently been enabled, by the kind hospitality of Dr. A. Bettencourt, to re-examine the subject. Briefly stated, I conveyed to Lisbon 57 *H. fraterna*-free mice, 30 of which I have fed on fresh *H. nana* eggs obtained from the stools of infants in the hospital attached to the Instituto Camara

Pestana, the remaining 27 serving as controls. In the first batch of *H. nana* egg-fed mice, two were infected out of ten: in the second batch of 13, four were infected; and in the third batch of seven one only was infected. Thus 23 per cent. of the mice were infected—a result which is satisfactory in view of the fact that all the mice were adults and therefore largely refractory to infection. The 27 control mice showed no signs of infection, and thus the possibility of accidental infection with *H. fraterna* is entirely excluded. Saeki and Uchimura are therefore correct in their view that *H. nana* and *H. fraterna* are one and the same species (though the converse experiment of infecting monkeys or man with *H. fraterna* of mice and rats is still a desideratum), and doubtless man has become secondarily infected with a parasite which originally was associated with mice and rats alone.

Full details of the experiments referred to above will be published at an early date.

I am, Sir, yours faithfully,

W. N. F. WOODLAND,
Helminthologist, Wellcome Bureau of Scientific Research, Instituto Bacteriologico Camara Pestana, Lisboa.

April 24th, 1924.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. F. Bolster is placed on the retd. list with the rank of Surg. Capt.

Surg. Lt. N. B. de M. Greenstreet to be Surg. Lt.-Comdr.

To be Surg. Lts.: R. W. C. Bull, J. B. Horam, and G. J. Hamy.

ROYAL NAVAL VOLUNTEER RESERVE.

A. M. MacGillivray, late Temp. Surg. Lt., R.N., to be Surg. Lt., R.N.V.R.

ROYAL ARMY MEDICAL CORPS.

Capt. W. D. Whamond retires, receiving a gratuity.

TERRITORIAL ARMY.

Col. C. P. Oliver, having attained the age limit, is retired and retains the rank of Col. with permission to wear the prescribed uniform.

Lt.-Col. J. S. Warrack, from R.A.M.C.T.A., to be Col. and Asst. Director of Medical Services, 44th (Home Counties) Divn., T.A., vice Col. C. P. Oliver, who vacates on completion of tenure of appt.

Maj. A. Thomas, having attained the age limit, is retired and retains the rank of Maj. with permission to wear the prescribed uniform.

Maj. (Prov.) J. Wallace is confirmed in his rank.

Lts. A. H. Richardson and R. K. Nisbet to be Capts.

A. F. G. Guinness (late R.A.M.C.), H. A. Eadie, and W. R. S. Watkins (late R.A.M.C.) to be Lts.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Maj. G. T. Willan, from the active list (supernumerary), to be Lt.-Col.

ROYAL AIR FORCE.

R. L. C. Fisher is granted a short service commission as a Flying Officer.

INDIAN MEDICAL SERVICE.

Majs. H. S. Matson, A. Cameron, A. H. Proctor, R. T. Wells, I. M. Macrae, A. S. M. Peebles, F. B. Shettle to be Lt.-Cols.

Lt. (temp. Capt.) Vijaya Shankar Rao Pandit to be Capt.

The King has approved the retirement of Maj. C. H. Brodribb (temp. non-effective list) on account of ill-health.

SOUTH LONDON HOSPITAL FOR WOMEN.—A new wing for surgical patients at the hospital, Clapham Common, S.W., will be opened by the Duchess of York on May 22nd. This extension will entail an additional expenditure of £6000, and every effort is being made to collect this sum before May 22nd, so that Her Royal Highness may be presented with purses containing sufficient to pay for the first year's maintenance. Any wishing to present purses (£10 or over) on this occasion are asked to communicate as soon as possible with the secretary at the hospital.

THE HOSPITAL PROBLEM.

CONFERENCE AT WESTMINSTER.

ON Monday and Tuesday, April 28th and 29th, a largely attended conference of hospital, medical, Labour, and kindred organisations was held at Caxton Hall, Westminster, to discuss the best method of hospital administration and control. At the first session the Labour view was set out by Mr. Somerville Hastings, M.P., the chair being occupied by Mr. Herbert Morrison, M.P.

The Premier's Letter.

Mr. Ramsay MacDonald wrote expressing his regret at being unable to attend and welcome the speakers. He said no one could ignore the straits into which war's aftermath had placed so many hospitals. Our hospital system—if the chaos now existing could be so called—remained a symptom of our inadequate civic organisation, but it fell far short of the achievements its keenest friends and supporters desired. Pending the day when the country became more fully aware of the need of prevention of destitution and disease, we could not stand idly by and allow our curative centres to suffer from neglect. The field of hospital activity should be surveyed, and ways and means devised whereby the great services thus rendered might be pursued free from the unhealthy methods by which some of our hospitals had had to seek finance in these latter days. The needs of the time demanded the application of the scientific spirit, the coördination of effort, and the elimination of waste. He felt strongly that society had never yet appreciated and valued the labours of those great public servants who, often without fee, reward, or publicity, were striving in the spirit of true scientific research to reduce the sufferings and increase the health of our frail bodies.

The Chairman paid a high tribute to the work the voluntary hospitals had done, and said the Labour Party yielded to none in admiration of it. The great question now was whether those hospitals could meet the requirements at present existing. If it could be shown that they did and could, he would not further ask for either State or public control. The sole test was efficient and effective public service.

The Labour View.

Mr. Somerville Hastings, in presenting the Labour view, said he had constantly in mind the great mass of the men and women who made use of the voluntary hospitals, which institutions provided practically the whole of the general hospital accommodation in Great Britain. But was the system likely to last for ever? Were the conditions which brought forth the establishment and the endowments of these hospitals likely to persist? There had hitherto been in this country a very wealthy class and a poverty-stricken class, but in the future conditions would be such that the poor would depend less on the bounty of the rich, and probably the rich might have less to give. Experience had shown that social movements in the experimental stage were best managed by voluntary effort, but when such a movement became a necessity it was better to look for support to a central or a local authority. There were certain disadvantages associated with the voluntary system because it was voluntary. First, there was lack of coördination: each hospital was a law unto itself. Secondly, as many general practitioners were not associated with a hospital, continuity of treatment did not exist. Thirdly, there was the danger that the medical necessity of the patient might not be the sole consideration in selecting cases for admission to hospital: there was certainly a tendency for those in authority at these hospitals to admit under easier terms patients who happened to be sent along by subscribers. Fourthly, too much energy and resource had to be expended by administrators of hospitals in collecting halfpence. The main difficulty, however, was that the voluntary system had provided only

about one-third of the hospital accommodation required to-day, and the Poor-law infirmaries which attempted to make up the deficiency did not succeed in doing so, and meanwhile the deficiency was becoming more pronounced. And patients' payments made the demand on hospital beds even greater. Among the attempts to bolster up the voluntary system was that adopted in some Northern towns, of deducting from workers' wages 1*d.* or 2*d.* per week, as agreed; this was less equitable than a rate or tax. He contended that payments by patients tended to act as a deterrent or to rob the poorest of the necessities of life, and threatened to change hospitals into nursing homes for the middle classes. Workmen might be in this way contributing towards the cost of treatment of men better off than themselves. He did not doubt that people who were very poor considered it a disgrace and would suffer anything to hide it. Put very bluntly, he believed a man had only to be a good liar and dress poorly to enter any hospital, whatever his riches might be.

The only way out of this impasse was for the State to shoulder the responsibility of providing medical treatment for all who needed it. Labour looked upon health as a national concern, and saw the danger of leaving it to charity or private enterprise; it desired treatment centres to be set up in outlying districts, local or cottage hospitals in the smaller towns, county hospitals conveniently situated, and national hospitals in the chief cities. It would organise intimate coöperation between all hospitals, and, where necessary, make easy transfer from one to another. This would have to be evolved by stages. Poor-law infirmaries should be taken over by local health authorities and converted into first-class general hospitals, for use without the taint of pauperism. Many of the country mansions now being offered for purchase would make good convalescent homes.

Discussion.

Viscount Knutsford said that 43 per cent. of the London Hospital patients were so poor that they could not pay anything towards the cost of their treatment. Any man, whether artisan or member of the middle class, came into the category of the necessitous poor if he could not afford to pay for the treatment he needed.

Dr. G. R. Ward (Medical Practitioners' Union) thought Poor-law infirmaries were wanted not as first-class hospitals, but as less pretentious ones to which patients could be drafted.

Mr. T. Lewis told how, in his Yorkshire locality, the workers coöperated in supporting the hospital, gradually working up to 3*d.* in the £ wages, and colliery proprietors and heads of industrial firms added to the contributions.

Miss Maud McCullum (Professional Union of Trained Nurses) emphasised the desirability of coördinating cottage hospitals in small districts and county hospitals with the national hospitals in large towns. That obtained in Denmark, and she had never seen better organisation anywhere.

Mr. L. A. Hill (Association of Approved Societies) spoke of the great need for removing the pauper taint, failing which many beds in Poor-law establishments would remain empty.

Dr. Astley V. Clarke (Leicester) said there was a large working-class element on the board of the Leicester Hospital, and they were the last persons to want a State hospital service. These men were responsible for the collection of £30,000 a year, and ran their own convalescent homes. The Labour view did not take sufficient cognisance of the mentality of the people.

Dr. Wilfrid S. Fox (St. George's Hospital) declared that patients were not admitted to hospital by anyone who knew of their means; the latter were inquired into by the almoners. Before seeking to destroy something which was admittedly doing very good work, careful consideration should be given to what it was proposed to put in its place. Hospitals existed not only for the benefit of patients, but also for research and the training of medical men.

Lady Barrett (Royal Free Hospital) maintained that the efficiency of the voluntary hospitals was constantly growing, and that they had an enormous vitality behind them. It was quite conceivable that the State should come in to do what the voluntary hospitals had left undone.

Sir Thomas Neill spoke of the importance of the community feeling the need of the spirit of self-sacrifice.

Dr. Ethel Bentham instanced cases to show the difficulty experienced by general practitioners in getting urgent cases into hospital and also the lack of coördination. It was very difficult to find out what treatment a case had had in hospital. She protested against the indignity of the antics of students and others dressed as clowns soliciting pence for the support of the hospitals.

Mr. N. Bishop Harman spoke of the inadequate representation of the hospital accommodation of the country in the Labour Party pamphlet, which did not include beds in fever, small-pox and other hospitals, and mental institutions and sanatoriums.

Mr. G. P. Blizard declared that the Labour Party had no wish to damp down any enthusiasm for voluntary hospitals; he pleaded for a complete system of hospitals for the country. Some hospitals were full and had a long waiting-list, while others not far away had vacant beds.

Mr. H. S. Souttar, speaking as a surgeon at London Hospital, said the only criterion for the admission of a patient was his medical or surgical need. It was hard luck that because a man had lived an industrious and careful life and saved a little money that it should be a barrier to keep him from hospital treatment when he needed it. The present requirement was an extension of the present system, and to that the Labour Party should direct their efforts.

Mr. Allen Clarke (London Panel Committee) contended that there was no reason why the benefits hospitals could confer should be restricted to the poorer classes, nor why an income limit should be set up. Private paying patients in hospitals did not finance those hospitals, and these did not provide the solution of the problem.

Dr. H. B. Morgan pointed out that the British Medical Association represented only half the profession in the country. He criticised the present out-patient departments, where ordinary patients were kept waiting in close contiguity with dangerously infective ones.

Dr. A. H. Bygott spoke as a member of the Labour Party and a M.O.H., and said the party were out to fill up the gaps on this hospital question. There was a great need for young surgeons to go and do operations at the smaller hospitals. The Labour Party, having attacked this problem, were not likely to turn back.

Mr. S. R. Lamb related the success which had been achieved in Sheffield by the hearty coöperation of the workers and the employers of labour; the civic spirit in regard to hospitals was there very manifest, and was a great factor in the success.

Mr. Hastings briefly replied, commenting on Lord Knutsford's statement that 43 per cent. of the London Hospital patients could not contribute anything to the cost of their treatment. The hospital was founded for those very people, and the statement showed that the hospitals were gradually being utilised by people better off, even by members of the middle and professional classes. An essential point about the Poor-law infirmaries was that the deterrent spirit obtaining applied even to medical treatment, and the latter was designedly less good than that obtainable elsewhere.

The Voluntary Hospital View.

On Monday afternoon the subject of discussion was "The Voluntary View," the chair being occupied by Dr. Bygott.

Viscount Knutsford, in his opening address, said he did not suggest a continuation of the voluntary hospitals because he was connected with them, nor

because he thought they had no faults and could not be improved. He believed they could easily be made to meet the present needs. If the Labour Party would propose anything which would lessen suffering more than did the present hospitals, it would receive his warm support. Was the history of State control such as to induce us to hand over our sick poor to the State? The State stood in the dock with many previous convictions for neglect against it; it had done nothing over a long course of years to see that the guardians had properly carried out their duties to the sick poor; only in recent years had the guardians taken the great steps forward which had been achieved. Guardians were not elected because of any special work in a knowledge of hospitals. He mentioned with special approval, however, such Poor-law infirmaries as Lambeth and Whipp's Cross, but said that, speaking generally, the object of guardians seemed to be to do as little as possible for the sick poor. The fact was that the people of England had learned to hate the Poor-law infirmaries, and would rather die than go into them. He criticised the inadequacy of the Government arrangements to deal with the sick and wounded in the war, and showed how much superior was the organisation of voluntary hospitals. If hospitals were controlled by the State there would be no grace added to the duty, none of that spirit which added beauty to duty. The voluntary hospitals of this country had brought to the sick poor the best medical attendance and nursing in the world. The recent committee of 12 eminent men took evidence about voluntary hospitals and stated it would be lamentable if by our apathy and folly it was suffered to fall into ruin, and they recommended a grant of a million pounds, which a parsimonious Government reduced by a half. All the progress in medicine and surgery had emanated from the voluntary hospitals; public or State-managed hospitals could not have approached such a record. If there was pressure work at voluntary hospitals it was done; there was no question of "down tools" or thought of overtime; no doctor worked with his eye on the clock. To thank a surgeon for coming down to the hospital at midnight to perform an urgent operation would be to insult him. The spirit in regard to those who came to their doors was not "What do you want?"; it was "What can we do for you?" and the object was to do it in the kindest way possible. The pamphlet issued by the Labour Party quoted the late Charles Locke's words, "The voluntary hospitals are the greatest pauperising agency in this country." But was it pauperising to help a fellow creature when he was down, to help a child when it was ill, to help a mother to get through her troubles? If so, it was time to tear up the Sermon on the Mount and go in for the cold code of the Charity Organisation Society. In the treatment of the sick there must be a standard, an ideal, to work up to. Hospitals were too often dependent on some amiable fanatic who combined with the manners of a gentleman the instincts of a felon. If there was a strong belief in the treatment of the sick in voluntary hospitals every effort should be made to strengthen the system, instead of starting something else which history had shown to be bad. Viscount Knutsford proceeded to answer the allegations of abuses which the Labour Party pamphlet contained. With regard to nursing, in four years only 47 nurses out of over 700 had resigned or been required to resign on account of ill-health. He argued that the increased demand for hospital treatment was a tribute to the kind of treatment given.

With regard to the remedy, the money was to be got shortly by a payment by everybody before reaching the age of 25 and arriving at responsibility, and there should be a scheme such as a hospital saving association to assist those who needed the hospitals. He would have taken off the income-tax figures all contributions to hospitals, and a similar deduction should be made from death duties. The general practitioner should be helped, not harmed. Surely the best plan was to strengthen what was admittedly good, rather than to change to a system which history did not support. State management would satisfy nobody.

Lord Somerleyton (the King's Fund) spoke of the improvement which the hospitals of London had steadily undergone during recent years. If rates were levied for the hospitals, voluntary subscriptions to them were practically certain to cease. Difficulties had arisen in respect of voluntary hospitals not so much because of decreased subscriptions as in consequence of increased cost of requisites; but even so, the deficits had been progressively decreasing, for whereas in 1920 the deficit was £383,000, in 1922 it was £174,000, and it was estimated that 1923 would show a surplus of about £200,000, owing to some large legacies. Even without the latter, the deficit for that year would have been only about £25,000.

Sir Alan Anderson considered the Labour Party pamphlet was well written but inhuman. A great economic revolution had been taking place in this country, whose inhabitants could no longer be sharply demarcated into rich and poor; there was now a great independent working class who were very proud of their individuality. The system of regular deductions from wages for hospital support was growing in a very satisfactory manner, and had extended to London. It was absurd to think the voluntary system was going to break down because of financial difficulties; a charge for treatment in disease was as reasonable as the provision of boots, clothing, and food for the maintenance of health.

Colonel F. E. Fremantle, M.P., argued that the big complicated London hospitals should not be taken as the model, but the cottage hospital which served the needs of a rural community with the coöperation of the general practitioner.

Mr. Canter said it was agreed that the present hospital accommodation was totally inadequate for requirements, hence it was necessary to try to find a way out. He contended that the proposals of the Labour Party had not yet really been contradicted. Two out of every three persons requiring hospital treatment were not receiving it. Many cases could only be expected to recover if they were taken from their bad home surroundings and treated in hospitals. He pleaded for hearty coöperation on the part of all interested in the question.

Dr. C. W. Saleeby spoke of the need for a more healthy mode of living, which would render hospitals less necessary. He thought too much was expended on bricks and mortar for hospitals, and too little attention bestowed on obeying the laws of health. Let all combine to work away at the prevention of disease.

Dr. H. B. Morgan contended that the Poor-law infirmaries were not the Labour Party hospitals, but were the Tory Party hospitals. It should not be beyond the wit of man to work them into an efficient auxiliary to the voluntary hospitals.

Mrs. Bond said she represented 52,000 married working women, many of whom had experienced the hardships of the present hospital system, the hours spent waiting for attention to a sick child with a husband and family waiting for their dinner at home. She alleged that many nurses suffered from flat-feet and varicose veins owing to the long hours of standing and poor food. Maternity and child welfare work was brought about by the agitation of the masses of the people, and something of the kind was needed in regard to hospitals, as voluntary work had only partially succeeded.

Miss McCullum said the Labour Party statement in regard to nurses was certainly a true bill in every respect. They were underpaid; after serving four years in a hospital she was supposed to be passing rich on £50 or £60 a year.

Mr. Somerville Hastings complained that the Labour Party pamphlet was frequently misquoted. State-controlled hospitals in such countries as Switzerland, Germany, and Austria were successful, and a great deal of original research work was done in them. The outstanding fact in this country was that

there were not sufficient beds, and the question was how were they to be provided? There should be State assistance, as a poll-tax affected everybody equally and not, as it should, according to their ability to pay.

Mr. Blizard said the pamphlet represented the very carefully considered opinion of a large committee on which eminent doctors and publicists were represented.

Viscount Knutsford briefly replied.

The Doctors' View.

On Tuesday morning the chair was occupied by Mr. Blizard, when the subject was The Doctors' View.

The Chairman said the subject should really be the British Medical Association's view, for among doctors there was a great divergence of view. If a start were made de novo, the function of the doctor should be regarded as keeping the people well, not to attend them in sickness. There was a great need for team work, for a pooling not only of financial resources but of medical resources. He hoped the libel would be put to rest that directly a doctor became a public servant he lost his better feelings. The Labour Party would go a long way towards placing the management of the hospitals in the hands of the doctors themselves. The Minister of Health had already set up a committee to inquire into the inadequacy of the number of hospital beds in this country and their unsatisfactory distribution.

In a long and exhaustive address Mr. Bishop Harman dealt with a very large number of points. He said the provision of money must depend upon policy, therefore policy must be defined. The Labour Party's scheme of hospital policy consisted of 13 propositions. The policy of the British Medical Association was the result of the slow growth of opinion, and had been discussed and voted upon by the divisions of the Association. It was based upon the direct experience of men engaged in the practice of medicine, and the application of that policy to the present-day conditions would secure steady improvement in hospital work. The difference between the State hospitals on the continent and the voluntary hospitals in this country was primarily due to a different outlook upon life and organisation. The policy of the Labour Party in this respect was revolutionary, that of the British Medical Association evolutionary. The former had found but little support from doctors. He proceeded to deal in detail with the 13 propositions of the Labour Party, remarking that Nos. 2, 3, 4, 8, and 10 were common ground. He objected that the number of available beds in the country given in the pamphlet was far short of the actual truth, for it did not include Poor-law hospitals, sanatoriums, mental and special hospitals. Including these, Great Britain possessed ten hospital beds per 1000 for the 38,000,000 people, the best proportion in the world. He had a particular objection to the part of the pamphlet which dealt with what were termed "anomalies of the voluntary system," one of them being stated to be that the number of appointments in hospitals was jealously guarded, with the result that all the big hospitals were badly understaffed. The statement that preference for admission was shown to those who could pay he stigmatised as absurd.

With regard to the policy of the British Medical Association, at present there were voluntary and statutory hospitals scattered through the country, mostly without any general plan of covering the ground, and no plan of coördinated effort. The Association believed that the defect could be removed if the mechanism of consultation between the several hospital authorities were provided. But to bring all hospitals to a uniform level of State control would be to find the "least common multiple." It was considered that the local committees should be extended so as to make them the coördinating bodies for all hospital accommodation required within their areas, including voluntary, municipal, and Poor-law, provided that the areas covered by the committees should be large, and that the personnel of these committees should include representatives of all the hospitals or hospital authorities concerned. Secondly, that the terms of reference to these committees should include a survey of all the hospital accommodation of the area, a determination of its adequacy, and the coördination of all the accommodation in the area, and the recommendation of any necessary additional accommodation. The committees should not interfere with the domestic autonomy of the hospitals; each type of hospital should be encouraged to work upon those lines of local initiative which had proved so vital in hospital work. Thirdly, the scope of the Voluntary Hospitals Commission should be extended to make it a standing consultative hospitals committee for England and Wales, and it should act as between the Ministry of Health and the local committees in all matters concerning hospital policy and the allocation of any grants which might be allocated to hospitals not directly supported by the State in its various functions. The voluntary hospitals, he declared, remained the pioneers of medicine. He did not think there would ever be any lack of funds or services for those who were in need. The Association considered that every patient of a voluntary hospital who was able to make a contribution towards the cost of maintenance and medical treatment should do so, unless the contributory method of subscription was adopted as essential in industrial areas.

Mr. Harman concluded by dealing with various contributory schemes and the costs, remarking that much could be done to relieve the voluntary hospitals of a heavy charge upon their resources by more generous grants in aid of education.

Discussion.

Miss Bond (the College of Nursing) alleged that nurses had in the past been overworked and underpaid, but the College she represented was doing its utmost to raise the standard of service and remuneration, thus rendering the nurse even more a helpful colleague of the doctor in prevention and cure of disease.

Dr. E. A. Gregg (Medical Practitioners' Union) called for a better relationship between the general practitioners and the hospitals, and declared that hospitals would probably not be called upon to treat, especially in the out-patient departments, many cases now dealt with there. His union asked that the general practitioner should be allowed to go back to the hospital for a portion of his day's work, for no one recognised better than the general practitioner his own limitations.

Mr. G. W. Canter (Post Office Workers' Society) contended that some of Mr. Harman's arguments were directly in favour of what the pamphlet put forward. The Labour Party wished to coöperate with those who had greater experience than themselves, and if this meeting showed a proper spirit of coöperation tangible results in dealing with the problem would ensue. He had found that workers were less inclined towards the local tax now that the friendly societies had come forward with grants, and he found it difficult to convince them that the two combined did not pay for the treatment.

Dr. May Dickinson Berry spoke of the changed conditions of the country since the war. People who before the war had the money and continued the tradition of giving had now largely lost it, and those who now possessed it had not acquired the giving tradition. She emphasised the strong self-reliant British character as a factor in the situation, which she was the more impressed with after a considerable sojourn abroad.

Mr. R. Lindsay (British Dental Association) asserted that the voluntary system of this country in so far as it applied to dental treatment was an absolute failure. Dentists had supplied not only the services, but also the money for the support of dental hospitals, which was very unsatisfactory, and all would agree that the money should come from elsewhere. It ought to be possible to devise some means whereby an efficient public dental service could be maintained.

Dr. Alfred Cox (Medical Secretary, B.M.A.) said that in initiating this conference the Labour Party had set an example which might very well have been followed by others. It had certainly justified itself. The great question was as to whether there should be further State assistance to the maintenance of hospitals. The answer obviously was in the affirmative, and what had to be agreed was how it was to be given. Some objected to the obvious intention of some Labour people to discourage the feeling of helping oneself, preferring a pooling of resources and doing everything through a committee. He regarded Mr. Harman's suggestion as the best way out. He sincerely hoped that before the conference closed some via media would be found to enable the two parties to travel side by side.

Dr. Gordon Ward said the large hospitals in London were aggregated in a manner greatly to their disadvantage. If the Poor-law infirmaries were to be brought in, the staffs would have to be drawn from the locality. Seventy-five per cent. of the cases dealt with in the large London hospitals could be as well dealt with in the country, and he asked whether it was intended that the general practitioner should normally function in the hospital work.

Mr. Lingstrom (National Conference of Friendly Societies) hoped a result of the conference would be the appointing of a Royal Commission to inquire into the matter thoroughly. Whatever might happen, he hoped this country would be spared the German cast-iron system.

Dr. Astley Clarke (B.M.A.) said the Leicester Hospital had no paid beds and no almoner, but in that town a hospital conscience had been aroused, and in 18 months there had been collected £75,000. He thought medical students at the large teaching hospitals did not receive sufficient clinical experience, hence there should be a system of drafting such students from the large hospitals to the smaller provincial ones.

Mr. Hill (Association of Approved Societies' Secretaries) denied that the Labour Party's hospital policy was revolutionary. If an increased grant was to be obtained, it surely was reasonable to have State control. He criticised the conditions at out-patient departments.

Dr. Gordon Dill spoke of the Sussex contributory scheme, which numbered 17,000 beneficiaries, and had been very successful.

Mr. H. S. Souttar (B.M.A.) said London Hospital would welcome lay coöperation from any source, and said he considered the Labour Party pamphlet was a statesmanlike document. He expressed admiration of State and municipal hospitals and their equipment on the continent.

Mr. Harman replied.

The State and Rate-aided Hospitals.

This was the subject for discussion at the last session on Tuesday afternoon. Mr. Canter occupied the chair.

Dr. John Buchan (Bradford), in introducing it, said the hospital problem in this country in its present form owed its origin to four factors: (1) an increasing urbanisation of the population, with a deterioration of the living conditions and an incoming of many serious cases of illness requiring hospital treatment; (2) the awakening of the health conscience of the people, causing a demand for further hospital provision; (3) more care and thoughtfulness in the means for the relief of poverty; (4) the increasing improvement and complexity in medical and surgical science, bringing within scope of the hospital many cases which previously could be treated at home. A way out of the heavy demand was found in the establishment of rate-aided hospitals, and the work of these had so extended during 50 years that they now provided 75 per cent. of the hospital accommodation of the country. Admittedly there was a deficiency of hospital accommodation in all parts of the country, and he thought the need was most acutely felt in the newer industrial areas. Bradford was a good illustration of this, where the only general hospital contained less than 200 beds, and for many years the working classes of Bradford needing treatment had to resort to the Poor-law infirmary, which they did unwillingly. After the war, the Poor-law authorities and the city council conferred, with the result that the infirmary, containing 1000 beds, was handed over for use by the council as a general hospital. In 1920 the admissions numbered 3804, in 1921 4482, in 1922 5141, and in 1923 5608, both patients on the order of the relieving officer and those recommended by general practitioners being admitted. The institution had now gained for itself a high local reputation. He had much to advance in support of rate-aided institutions, specially instancing the brilliant advances made by the officers of the R.A.M.C. in the last 30 years. At Bradford an attempt was made to bring the general practitioner into the scheme, but he did not come: usually his life was too busily occupied.

Dr. Gregg, dealing with the last point, thought it a great pity that the general practitioner should have to work so many hours a day in order to make a living.

Mr. Harman reminded the meeting of the attitude of the B.M.A. on the Bradford matter, and on the general question declared that the desire was for the work of the State in this connexion to be directed into profitable channels.

Sir Thomas Neill emphasised the necessity of the beds now empty in State institutions being utilised, and urged that no further time should be spent in conferences, but action should be taken without further delay.

Colonel Fremantle, M.P., said the difficulty which Parliament would at once point out was that hospital provision was asked for for those who could pay as well as for those who could not, and if hospital treatment was to be free to all classes it would mean an expenditure of many hundreds of millions of pounds a year. He advocated the linking of the finance of this on to the present system of national insurance.

Mr. Lesser agreed that if the financial part of the problem could be settled, many of the other difficulties would disappear. He thought it was questionable whether Colonel Fremantle's financial idea was practicable, but it might be possible to develop the matter along the lines of the Hospital Saving Association.

Dr. G. E. Carter, in a general review of the situation, said he had worked in Bradford Hospital, and the infirmary there was largely supported by mill-owners, whose workpeople received treatment there, and those owners thereby made a very good investment.

Dr. C. Buttar did not see why the hospital question should not be set on its legs on voluntary lines; he would like to see the hospitals run without any State aid at all.

Resolutions.

After considerable discussion the following resolutions were carried without dissent (Lord Somerleyton, Mr. Buchanan, and some others intimating their intention not to vote either way, as they had no authority from their respective bodies).

1. The accommodation, equipment, and finance of hospitals generally are inadequate, and must be supplemented.

2. The geographical distribution of hospitals is uneven, leading to overlapping and the lack of coördination. The unit of such coördination should be such as to include a sufficiently large population.

3. There should be a closer relationship between voluntary hospitals themselves, between the voluntary hospitals and the various hospitals provided by local authorities, between the curative and preventive medical services, and between the hospitals and the private medical practitioner.

4. Some form of public assistance is essential if a complete and adequate hospital system is to be maintained, and developments should be directed to preserving what is best in the present voluntary system.

5. The infirmaries at present under the Poor-law should be thrown open to all citizens and removed from all taint of the Poor-law.

Organisations Represented.

The following organisations were represented at the conference :—

British Medical Association; Medical Practitioners' Union; Medical Women's Federation; Federation of Medical and Allied Services; The Sheffield Joint Hospitals' Council; Montagu Hospital, Mexborough; British Dental Association; Royal British Nurses' Association; The College of Nursing, Ltd.; National Council of Trained Nurses of Great Britain and Ireland; The Professional Union of Trained Nurses; Queen Victoria's Jubilee Institute for Nurses; The General Nursing Council for England and Wales; Joint Committee of Approved Societies; The National Association of Trade Union Approved Societies; National Conference of Industrial Assurance Approved Societies; The Association of Approved Societies; National Association of Insurance Committees; National Federation of Employees' Approved Societies; The Incorporated Association of Approved Society Secretaries, Ltd.; National Conference of Friendly Societies; Panel Committee for the County of London; Hospital Saturday Fund; King Edward's Hospital Fund for London; The Hospital Saving Association; The British Charities Association; The British Red Cross Society; Standing Joint Committee of Industrial Women's Organisations; The People's League of Health; The League of Mercy; Royal Institute of Public Health; British Hospitals Association; St. George's Hospital; St. Bartholomew's Hospital; London Hospital; St. Thomas's Hospital; University College Hospital; Executive Committee of the Labour Party; Labour Party's Advisory Committee on Public Health.

THE LABOUR VIEW OF THE POSITION OF HOSPITALS.

IN the course of the conference on the Hospital Problem at Caxton Hall reference was made to the statement of policy of the Labour Party with regard to hospitals.[1] This pamphlet was noticed in THE LANCET (1922, i., 808). For the convenience of our readers we reprint here the summary which concludes the pamphlet.

1. The Labour Movement, recognising the importance of health to individual and national well-being, considers that all hospitals, both special and general, together with allied institutions, should be so organised under one authority as to form the foundation on which a complete hospital system for the nation with sufficient accommodation to deal with all cases requiring institutional treatment can be built.

2. It would establish treatment centres in outlying districts, local or cottage hospitals in the smaller towns, one or more county hospitals conveniently situated in each public health area, and national hospitals in London and Edinburgh and other University towns.

3. It would organise intimate coöperation between all the hospitals in each public health area and also between them and the nearest national hospital. It would make arrangements for easy and rapid transference of patients from one hospital to another according to the nature and requirements of the case.

4. It would organise intimate coöperation between the medical staffs of the various hospitals, and also between them and general practitioners, making the participation of the latter an essential feature of the hospital scheme.

5. It would provide the health authorities with sufficient beds under their own control to deal with all patients for whom they have already undertaken the responsibility. (Patients suffering from tuberculosis or venereal diseases; children from the school clinics; mothers and infants from the maternity and child welfare centres; and adults under the National Health Insurance scheme.)

6. It would introduce the necessary legislation for the transference of the Poor-law infirmaries from the guardians of the poor to the local health authorities, thus placing at their disposal many beds now vacant. It would remodel these infirmaries, where necessary, equipping and conducting them in every way on the lines of the best existing general hospitals.

7. It would give voluntary hospitals the option of being taken over by the health authorities entirely, of remaining on a voluntary basis entirely, or of receiving grants from public funds conditional on efficiency and the representation of the local health authority on the boards of management. It would secure close coöperation between those remaining entirely on a voluntary basis and the public hospitals.

8. It would relieve pressure on hospital beds in the cities and towns by acquiring convalescent homes in the country, into which should be admitted cases of threatened breakdown, and patients no longer requiring hospital treatment, but not sufficiently recovered to return home.

9. It would establish free dental clinics connected with all hospitals, believing that supervision and treatment of the teeth are essential to health.

10. It would also arrange a scheme for visiting nurses and home helps in connexion with the hospital system, and lays special stress on the importance of skilled supervision and after-care of patients who have recovered, or partially recovered, from illness.

11. It would make all public hospitals free and open to everyone who would be likely to derive benefit from institutional treatment.

12. While doing this, it would insist on the treatment offered being equal to that of the best voluntary hospitals in efficiency.

13. It would endeavour to forestall the necessity for so many hospital beds by a forward social policy generally, and in particular by establishing a "national minimum," by abolishing all slums, and by undertaking a comprehensive housing scheme.

[1] The Labour Movement and the Hospital Crisis, a Statement of Policy with regard to Hospitals. Published by the Trades Union Congress and the Labour Party, 32, Eccleston-square, London, S.W. 1s.

Obituary.

THE LATE DR. R. J. REECE.

A COLLEAGUE at the Ministry of Health writes as follows of the late Dr. R. J. Reece (THE LANCET, April 26th, p. 876), revealing at the same time the fine spirit of coöperation with which the official sanitary business of the country has been conducted at Whitehall :—

One is apt to forget the magnitude of the changes which have taken place in the central medical department since Reece joined the staff of the Local Government Board in 1893. There was then comparatively little outside impetus to public health measures, save when some unusual epidemic occurred or threatened. The medical staff, though distinguished and quietly influential, was a small one. At the Whitehall office you could find Sir Richard Thorne Thorne in well-earned authority as medical officer of the Board, William Henry Power, his incomparable adjutant, and Franklin Parsons, a walking encyclopædia of hygiene. There was a small body of medical inspectors, but they came there only for conferences with their chiefs, to compare notes, or, be it confessed, to gossip. Their workshops were their libraries at their own houses; and as they were strictly required, after the Hamburg cholera agitation, to reside within the four-mile cab radius they were not far apart; they knew one another more intimately at home than at the office, and to a large extent they settled between themselves the ways in which their ordinary duties were carried out. These in the main were epidemic prevention, so far as depended on the central department; vaccination administration, with all that the complicated and exact machinery that it required in the arm-to-arm period; port sanitary organisation: sanitary surveys, and like questions. In this little group Reece was a most welcome colleague. He brought us a wealth of knowledge of aspects of life we knew little of, gained from a many-sided and hard-lived existence as a student and resident at St. Bartholomew's and Cambridge, and in many non-medical regions outside. We learnt from him about emergency surgery and medicine in which he was expert, and he told us weird experiences that we had never realised could come to any house surgeon. We learnt, too, the customs of sea captains and seamen (Reece had already served his apprenticeship as a medical officer in the Port of London), the ways of the City and of A Battery of the Hon. Artillery

Company, about cycle record-breaking, bulldogs, shooting etiquette, and good ordering of a dinner, and the value of vintages to the well-conducted life. All this and much more we acquired by his own example or in the form of word-perfect stories and character sketches, centring round himself and friends, some of whom we never met in person but felt we had known from the cradle. Perhaps, to our surprise, we quickly realised how intensely and seriously Reece had taken to his official duties, how well some of them suited his temperament, and what infinite pains he rejoiced to take in order to get them done so that no conscience could smite him or no just critic could say they should have been done better. Some of us, who used to hanker after new worlds and policies, were apt to be fretted with our limitations to those corners of public health work which the Local Government Board dealt with by supervision in minute details, and thought ourselves cramped by the title of "Medical Inspector." With Reece it was otherwise: the very position of a Government inspector—they were not then as pebbles on the beach—appealed to him. No effort must be spared for any inquiry, large or small, which he undertook. When Reece started an inspection, messengers toiled with barrow loads of official files and the postman groaned over his bags. Before he went to a district, he had charged his notebook and his memory with all that was to be learnt about it, past misdeeds of administration, troubles with the town clerk or with the sanitary officers, the men to be careful with, and the allies to seek in the event of the obstacles or opposition which he always allowed for in advance and expected to meet. For each class of work, sanitary surveys, port inspections, or vaccination visits, he first made sure of office precedents and all things that headquarters might require, then added his own points, and made himself a guiding and all-embracing code. There was the instruction to give—the 30 points which must be mentioned and brought home, usually by an appropriate anecdote, to the port medical officer or public vaccinator visited, the other 20 points to be kept in his own mind for inquiry, which as tests would infallibly prove whether official requirements and departmental orders were being properly observed, or whether—greatest of crimes—an attempt was being made to throw dust in the eyes of Her Majesty's Inspector. And, while following his code, he kept always a keen eye for the real source or person responsible for things being well done, or not done as they should be. Inspections in almost all parts of the country, made in these ways, provided Reece with an acquaintance with all sorts and conditions of men, whom he fixed in his mind ever after, with their characteristics, qualities, and hobbies, and among whom many became personal friends for the rest of his life, always to be remembered and helped, or to be called upon when their aid was needed.

In all this work of inspection, and in the aftermath of correspondence and controversy which not rarely followed it, Reece had the great advantage of securing and deserving the confidence and support of his departmental chiefs and colleagues, medical and non-medical, and, above all, the guidance and wise counsel of William Henry Power, to whose lightest word or hint we all listened. Reece was an ardent admirer of the methods by which the senior epidemiologists of that period had achieved their results—by patient labour and investigation of all attainable facts, accumulation of circumstantial evidence and their logical analysis, such as Power's own work at Hendon, Pirbright, and Fulham. We had then few bacteriological short cuts and no scientific warrant to invoke the convenient healthy carrier of infection when we were in difficulties. While keeping abreast with new knowledge and in due course adding to it, Reece always closely followed the methods of circumstantial evidence in his own investigations into outbreaks of infectious diseases. No hiatus was permitted which could possibly be filled: rather than miss a date of exposure to infection he would get up before dawn and ride through a snowstorm; to verify an entry in a notification register he would work till midnight. His greatest value to his department probably lay in his dealing with epidemics which needed prompt action. When he was sent down to an outbreak, headquarters might be certain that they would not be left long without telegrams, reports, and work to do, but headquarters could also safely take for granted that the emergency was being efficiently dealt with. Reece proved this early during the Grimsby cholera outbreak of 1893, and notably during the great typhoid outbreak in Lincoln in 1904. To his fellow inspectors, Reece's return from one of these inquiries was a perpetual joy. They had to listen—and it was good for them—to the whole story, the human events, the doings and villainies of the persons concerned, and the epidemiological facts and problems to be explained, all put before them with Reece's graphic and circumstantial descriptions—well worth the cost of the many hours of subsequent work which they were sure to have to give to help with the official report, to support the righteous, or aid in confounding the unworthy.

The period which thus comes back to memory had ceased almost before Sir William Power's retirement in 1908. Much of Reece's best and larger work was to come afterwards. He had still to take his place and his share in the expansion of the central department during Sir A. Newsholme's tenure of office, and it was during this period that his well-known investigations into poliomyelitis incidence was done. He was still to justify his civil training as well as his knowledge of army matters by his handling of the organisation which dealt with epidemic cerebro-spinal fever among the troops in this country during the war, work which meant directing preventive measures from the centre on a scale rarely before attempted. He was to find later, when public medicine further extended its boundaries on the formation of the Ministry of Health, and the present medical department was organised under Sir G. Newman, an opportunity given to him, under post-war conditions, to control those very systems of port sanitary administration, small-pox prevention, and public vaccination which he had made peculiarly his own. Here he was deferred to in doctrine and practice, and aided by a devoted section of the staff to whose work and interests he gave himself sympathetically and unsparingly. But it was in the earlier years which I have ventured to recall that his principles, views, and systems of practical preventive work became formed, his habits of accurate observation and devotion to his department were developed, and his many friendships in the public health service were made. The time when he was "on the road," as he used to term it, was, I believe, the happiest period in his busy and fruitful life.

THOMAS DALTON, M.D. EDIN., M.R.C.S. ENG.

BY the sudden death from heart failure at an advanced age of Dr. T. Dalton, Llandudno, the community and surrounding district has lost a "grand old man." A member of a well-known Cumberland family, Dr. Dalton studied in Edinburgh and Paris, and graduated M.D. of Edinburgh University in 1864, obtaining his M.R.C.S. Eng. in the same year. As a young practitioner he settled in Llandudno, and in 1914 he had practised in the town for half a century. He took an active interest and promoted every good work in connexion with the social life of the town. As far back as 1885 he was chairman of the Board of Commissioners, he was chairman of the magistrates, and was also a magistrate for the county of Carnarvon. On his retirement from active work in 1914 the town took the opportunity to express its appreciation of his loyal and distinguished services by making him a presentation in the town-hall and arranging a banquet in his honour. After the outbreak of the war he became chairman of the War Relief Committee, as well as chairman of the War Tribunal and War Savings Committee, and at a later date of the local branch of the League of Nations

Union. It was entirely owing to his efforts that the Llandudno Convalescent Home for Women was founded in 1869, and from that date he faithfully served as medical officer to the home, and from 1876 as trustee. He was an active and devoted Churchman, and took a keen interest in the R.S.P.C.A. The funeral on April 22nd provided public testimony to the pre-eminent esteem in which Dr. Dalton was held by all sections of the community—"a man whose integrity of character and uprightness were above all praise."

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations recently held the following candidates were successful:—

DIPLOMA IN HYGIENE.

Rangaswami Aiyar Adiseshan.

DIPLOMA IN PUBLIC HEALTH.

Justin W. F. Albuquerque, Marcus H. Babington, Chinglepet Balakrishna, John S. K. Boyd (distinguished in Bacteriology), Elizabeth P. Cameron (distinguished in the Application of Sanitary Science), Anil Chandra Chatterji, Isabella C. Darling, Louisa P. Gordon, Edith M. F. McGill, Des Raj Nayar, John G. Ronaldson, Jamiat Singh, Thomas S. Stirling, Vincent T. Thierens, William J. Vickers, and Thomas Young.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.

Part I., Physics and Electrotechnics.—Arthur R. Colyer, George R. M. Cordiner, Frederick H. Dommissé, Charles R. Enticknap, Alexander C. Fowler, Shanazar G. Galstaun, Eric E. Holdsworth, Pratap S. Khosla, Narayan H. Kulkarni, Harold A. McCoy, Archibald C. Macrae, Frank P. Montgomery, Thomas D. Overend, Jean S. Riach, Gordon D. Thomson, Richard S. Topham, Kenneth F. Vickery, John Wall, Barbara G. Wood, and John Y. Wood.

Part II., Radiology and Electrology.—George R. M. Cordiner, Frederick H. Dommissé, Norman Grellier, Eric E. Holdsworth, Narayan H. Kulkarni, Harold A. McCoy, Archibald C. Macrae, Godfrey W. Mitchell, Frank P. Montgomery, Jean S. Riach, and John V. Sparks.

UNIVERSITY OF LONDON: *Advanced Lectures in Anatomy.*—A course of four lectures on the Development of the Human Embryo up to the Appearance of the Primitive Segments will be given at King's College, London, by Dr. T. H. Bryce, F.R.S., professor of anatomy in the University of Glasgow, at 5.30 P.M., on May 15th, 16th, 19th, and 20th. The chair will be taken by Prof. J. P. Hill, F.R.S. The lectures will be illustrated by lantern-slides and models. Admission is free, without ticket.

At recent examinations the following candidates were successful:—

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

With special knowledge of Psychiatry: Noel H. M. Burke, Roy N. Craig, Elizabeth C. Eaves, Anne Fairweather, Norman Moulson, Alexander Walk, and Isabel G. H. Wilson.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the College was held on April 24th, the chair being taken by the President, Sir Humphry Rolleston.

The following candidates were admitted to the Membership, having passed the required examination:—

Guy W. Elkington, Alexander W. Hendry, William E. Lloyd, Enrico Moll, Annis G. H. Springthorpe, Charles E. V. Sutherland, Amelia MacDougall Thoms.

Licences to practise physic were granted to 158 candidates who had conformed to the by-laws and regulations and passed the Final Examination of the Conjoint Board. The names of the successful candidates will be given in the next issue of THE LANCET.

The following were elected to the Fellowship on the recommendation of the Council:—

Clifford S. White, Hugh T. Ashby, Eric Bellingham Smith, Rawdon A. Veale, Lancelot S. T. Burrell, Matthew J. Stewart, Richard A. Rowlands, Edgar D. Adrian, Charles P. Symonds, George C. Low, John A. Ryle, and Major Greenwood. Nominated by the Council under By-law XLI. (*b*): John C. G. Ledingham, F.R.S.

A communication from the Secretary of the Royal College of Surgeons of England dated April 11th, reporting proceedings of the Council of that College on April 10th, was received and entered on the minutes.—A letter from Dr. J. A. Hayward, asking that the Membership, which he resigned in 1898, may be restored to him, was read for the second time. This application was granted.—The quarterly report of the College Finance Committee was received and adopted.—Books and other donations to the library presented during the past quarter were received and thanks returned to the donors.—The President then dissolved the Comitia.

THE first conversazione of the Royal Society will be held at Burlington House on Wednesday, May 14th, at 8.30 P.M.

NEW INSTALLATION AT HARROGATE.—A new apparatus for nose and throat treatment has been installed at the Royal Baths, Harrogate. By its means the sulphur waters are atomised by compressed air at any desired temperature and pressure.

NAVAL MEDICAL COMPASSIONATE FUND.—At the quarterly meeting of the directors of the Fund, held on April 25th, Surgeon Vice-Admiral Joseph Chambers, Medical Director-General of the Navy, in the chair, the sum of £125 was distributed among the several applicants.

ROYAL SANITARY INSTITUTE.—A sessional meeting of the Institute will be held on Friday, May 9th, in the Town Hall, Tunbridge Wells, at 5 P.M., when discussions will take place on Child Welfare Work, Retrospective and Prospective, to be opened by Dr. F. C. Linton, and on Tunbridge Wells Undertakings; Water-Bearing Strata in and Around Tunbridge Wells: Rainfall and Drought of 1921, by Mr. W. H. Maxwell, A.M.Inst.C.E. The chair will be taken by Dr. Louis C. Parkes.

SLEEPY SICKNESS IN SHEFFIELD AND MANCHESTER.—In Sheffield cases of encephalitis lethargica are on the increase, and in a recent week 11 new cases and 7 deaths were notified, compared with 37 cases and 3 deaths in the previous week, bringing the total since March 10th to 127 notifications and 16 deaths. In Manchester, since the beginning of January, there were 180 cases and 27 deaths. Only five cases were reported last week, and a similar number the previous week. In Manchester 1071 fresh cases of measles were reported last week, an increase of 100 on the previous week. At the corresponding period last year the number was 111.

MANCHESTER HOSPITALS.—The coming inquiry by the Voluntary Hospital Commission into the shortage of hospital accommodation is of great interest to the Manchester and Salford community, as these two areas together are the largest hospital centre in the country outside the Metropolis. Even with the best efforts and utmost good-will to extend the number of hospital beds, it is computed that during the last 20 years there has been no increase in beds comparable to the increase of the population. In the district there are 2444 voluntary hospital beds, and it is stated that there are nearly two cases waiting for each one of these beds. Financial difficulties alone delay the contemplated additions. In 1922 the ordinary income of the several hospitals was £290,000 and the expenditure £350,000, leaving a deficit of £60,000—i.e., more than £1000 every week to be met by special grants. According to the local secretary of the Hospital Sunday Fund, the contributions by the middle classes are reasonably good. The working classes fail, probably because there is no efficient organisation for collecting from them. In Manchester and Salford the amount collected from the wage-earning classes is but one-fifth of the sum contributed in Glasgow, and only one-half of what is collected in Birmingham, Leeds, and Newcastle-on-Tyne, and considerably less than the working class contribute in Leicester—a town with a population only about a quarter of that of Manchester.

SOCIETY OF M.O.H.'S: *Maternity and Child Welfare Group.*—The annual meeting of this group of the Society will be held at Caxton Hall, Westminster, S.W. 1, on July 3rd, at 5 P.M. The subject for discussion is the Treatment of Babies Suffering from Malnutrition and the Results obtained by Ward Provision, whether Municipal or Voluntary, for such Babies. The discussion will be opened by Prof. E. Mellanby, who will speak from his experience at the Royal Infirmary, Sheffield. Dr. Donald Paterson, of the Infants Hospital, London, will follow. Dr. Janet Campbell, of the Ministry of Health, hopes to be present. In the subsequent discussion it is hoped to hear the experience of the medical officers of babies' hospitals and wards throughout the country.

Fever Hospitals Medical Service Group.—A meeting of this group was held on April 25th, at the City Hospital, Newcastle-upon-Tyne, Dr. E. W. Goodall presiding. After a tour of the hospital, conducted by Dr. H. Kerr, papers were read by Dr. T. N. V. Potts and by Mr. Neil Maclay on Three Years' Specialist Oto-Rhinological Treatment in Scarlet Fever—a Survey and Demonstration. Several illustrative cases were shown. In the discussion which followed the subject of the treatment of conditions of otitis following infectious diseases was dealt with by Mr. W. T. Gardiner and Mr. J. K. Love, from the point of view of the aural surgeon, and by the President, Dr. C. B. Ker, Dr. F. H. Thomson, and Dr. D. S. Sutherland, from the point of view of the fever hospital administrator. Dr. Ker, the medical superintendent of the City Hospital, Edinburgh, was elected President of the group for the year 1924–25.

HARVEIAN SOCIETY OF LONDON.—A clinical meeting will be held at the Paddington Infirmary, 285, Harrow-road, W., on Thursday, May 8th, at 4.30 P.M.

FEDERATION OF MEDICAL AND ALLIED SERVICES.—The annual dinner of the Federation will take place at the Langham Hotel, Portland-place, London, W. 1, on May 30th. Sir Berkeley Moynihan, the President, will take the chair and a number of distinguished guests are expected. Individual members of the Federation and members of coöperating bodies are invited to make early application to the Secretary, at 12, Stratford-place, for any tickets they may require for themselves and guests, either ladies or gentlemen. The price of the tickets is 12*s.* 6*d.*

BRITISH SOCIETY FOR THE STUDY OF ORTHODONTICS.—The Society offers certain prizes, to be awarded triennially, for competitive essays. The first award will be for the three years ending Dec. 31st, 1926, for which the prizes are as follows: (1) A medal executed in silver and an honorarium of 50 guineas; (2) an honorarium of 20 guineas; (3) an honorarium of 10 guineas. The subject for the essays to be submitted in competition for this award is: The Macroscopic Changes which Normally Occur in the Jaws and Teeth of Man and in their Mutual Relations, from Birth to the Complete Eruption of the Second Permanent Molars. The prizes are open to competitors of all nationalities. Full particulars will be sent on application to the hon. secretary, 11, Chandos-street, London, W. 1.

INTERNATIONAL SOCIETY OF PUBLIC HEALTH OFFICERS.—As a result of the recent interchange of public health officers under League of Nations auspices the decision has been made to set up an international society open to all medical officers of health who are taking part in the various interchanges organised by the League. A provisional committee, composed of members from Great Britain, Russia, France, Germany, Poland, Italy, and Ecuador has been elected to draw up the constitution. The society will have its headquarters at Geneva, and all public health officers who have already taken part in League interchanges—namely, 240 from 43 different countries—will be invited to become original members. The new society will have as its principal object the development of the League's Health Organisation. Its members will exchange information on all matters of public health.

INTERNATIONAL CONFERENCE ON INDUSTRIAL HYGIENE.—The Swiss Organising Committee of Health Experts for the first international meeting for the study of problems of industrial hygiene has supplied the following names of those who are taking part in the Conference:—Industrial lighting and eyestrain: Mr. Gaster (London), technical report; Mr. Oblath (Trieste), general physiopathology; and Dr. Stassen (Liege), lighting in mines and miners' eyestrain. Vitiated atmosphere in workshops: Prof. L. Hill (London), ventilation (katathermometer); Mr. Kohn-Abrest (Paris), dust and smoke; and Prof. Lehmann (Wurzburg), gases. Value of fatigue tests: Mr. F. Lee (New York), chemical methods, general criticism of fatigue tests; Prof. M. Patrizi (Bologna), mechanical and graphical methods; and Mr. Wyatt (London), psychological methods. The Committee hope to be able to distribute the reports before the meeting (July 18th to 20th, 1924). Requests for information should be addressed to Prof. Cristiani, Institut d'Hygiene, University of Geneva, Switzerland.

INFECTIOUS DISEASES IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 19TH, 1924.

Notifications.—The following cases of infectious disease were notified during the week, namely: Small-pox, 93; scarlet fever, 1316; diphtheria, 537; enteric fever, 49; pneumonia, 1607; puerperal fever, 40; cerebro-spinal fever, 11; acute poliomyelitis, 1; encephalitis lethargica, 253; dysentery, 3; ophthalmia neonatorum, 119. No cases of cholera, plague, or typhus fever were notified. The cases of encephalitis lethargica, 47 more than in the previous week, were notified in the following counties: London 33, Chester 5, Derby 6, Durham 5, Essex 6, Gloucester 14, Lancaster 26, Middlesex 4, Northumberland 19, Nottingham 7, Stafford 4, Surrey 7, Warwick 33, Yorks W.R. 55; and elsewhere in smaller number.

Deaths.—In the aggregate of great towns, the deaths from influenza fell from 316 to 282. In London the deaths from diphtheria rose to 15, and those from measles, which had been 66 in the preceding week, fell to 57 last week. The deaths from influenza in London rose to 45 last week.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Budget.

ON Tuesday, April 29th, Parliament reassembled after the Easter recess, and Mr. SNOWDEN, the first Labour Chancellor of the Exchequer, introduced the Budget in the House of Commons. It imposes no new taxes and makes no additions to existing taxes. He said that since December, 1919, the total reduction in the National Debt, external and internal, had been over £650,000,000. As a net result since that date we had reduced our annual interest charge by £40,000,000 and laid the foundation of an improvement in credit which it was hoped would still further reduce the debt burden in the future. He felt able to be optimistic as regards the future. Unemployment was steadily decreasing. So long as the Labour Government remained in office they did not intend to ask Parliament to abolish the Imperial preferences now accorded, but they would reserve full liberty to propose the reduction or abolition of duties on the commodities to which the existing preferences applied. He had agreed with the Postmaster-General that he should make in the near future certain postal concessions at an approximate cost of £500,000 in the current year and £1,000,000 a year thereafter.

The sugar duty would be reduced from 2½*d.* to 1½*d.* per lb. This would cost £17,700,000 this year. The tea duty would be reduced from 8*d.* to 4*d.* per lb. The correlated duties on cocoa, coffee, and chicory would also be reduced by one-half. The increase on the dried fruit duty of 50 per cent., which was introduced in the Second Budget of 1915, would not be renewed. He proposed to abolish the duty on sweetened table waters. The duties on imported manufactured articles, commonly known as the McKenna duties, would be abolished from August 1st next. Relief would be accorded in respect of entertainment duty by abolishing the tax on payments for admission up to and including 6*d.* and by reducing the tax on payments over that amount up to and including 1*s.* 3*d.* Methylated spirits would be required to contain an additional denaturant crude pyridine to render them more nauseous and more difficult to swallow. Inhabited house duty and the Corporation Profits duty would be abolished.

The Chancellor of the Exchequer concluded by saying that he was left with an estimated surplus in hand of £1,024,000 which he felt bound to keep, more particularly as he had made no provision for any supplementary expenditure beyond that included in the original estimates of the year.

HOUSE OF COMMONS.

TUESDAY, APRIL 29TH.

Final Pensions Awards.

Mr. D. G. SOMERVILLE asked the Minister of Pensions whether in his recent proposals for revision of the pension regulations he proposed to consider the cases of ex-Service men to whom final awards had been granted, but whose maladies in respect of such pensions had now become seriously worse; and whether he was aware that there were a very large number of such cases in which the ex-Service men concerned were receiving no assistance whatever from the State.—Mr. J. W. MUIR replied: Cases of the kind referred to are eligible for, and in fact receive, medical treatment from the Ministry, together (if necessary) with allowances. If, as the result of treatment, it should be ascertained that the award previously made was erroneously declared final, the case is dealt with by way of amendment of the award in the manner indicated in my reply on March 27th (see THE LANCET, April 5th, p. 731).

Nursing Service in Mental Hospitals.

Mr. HORE-BELISHA asked the Minister of Health if the departmental committee appointed to consider the nursing service in county and borough mental hospitals, and in what directions it could be improved, had yet come to any conclusions and, if so, of what nature; and, if the committee had not yet reported, when it might be expected to do so.—Mr. GREENWOOD replied: This committee has practically finished its work, and I understand it hopes to report very shortly.

FOREIGN DECORATION.—The King has granted to Dr. Reginald Gower Kirton, late Principal Medical Officer to the Egyptian Prisons Department, permission to wear the Insignia of the Third Class of the Order of Ismail, which has been conferred upon him by the King of Egypt in recognition of valuable services rendered.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETING OF SECTIONS.

Monday, May 5th.

TROPICAL DISEASES AND PARASITOLOGY: at 8.30 P.M. (In the Laboratory of the Royal Army Medical College, Grosvenor-road, S.W.)

Annual General Meeting:
Election of Officers and Council for 1924–25.

Demonstrations:
Lieut.-Colonel J. A. Anderson: (1) Types of Improvised Sanitary Appliances for Tropical Use. (2) Measurement of Heat and Sunlight in Environment.
Dr. Broughton-Alcock: (1) A Vibriothrix Simulating *Vibrio choleræ* in the Faeces. (2) Renal Abscess Demonstrating a Mycelium Occurring in a *B. coli* Infection of the Urinary Tract.
Dr. J. B. Christopherson: (1) Series of Photographs Illustrating the Distribution, Bionomics, and Clinical Features of *Schistosoma japonicum* in Japan. (From Dr. Akira Fujinami.) (2) Cercariæ in Liver of Intermediate Host of *Schistosoma japonicum*. (From Dr. Nakamoto.) (3) Section Demonstrating Male and Female Worms in Vein and Deposition of Ova from a Case of Egyptian Intestinal Schistosomiasis. (From Major W. R. O'Farrell.)
Prof. L. S. Dudgeon: Slides and Drawings Illustrating Certain Points in the Pathology of Appendicitis.
Lieut.-Colonel W. P. MacArthur: Sections of Human Liver Infected with *Hepaticola hepatica*. (Bancroft.)
Mr. J. Ramsbottom: (1) Orchid *Mycorrhiza*. (2) Demonstration of Some Points in the Life History of Yeasts.
Dr. J. Gordon Thomson: (1) A Series of Photographs Illustrating Houses in Rhodesia in which Blackwater Fever has Occurred. (2) Films Demonstrating *P. falciparum* in Blackwater Fever Cases.
Other demonstrations will be given.

Tuesday, May 6th.

ORTHOPÆDICS: at 5.30 P.M. (Cases at 5 P.M.)

Annual General Meeting:
Election of Officers and Council for 1924–25.

Cases and Specimens:
Mr. Tyrrell Gray: Case of Chronic Infective Polyarthritis in a Girl.
Mr. Muirhead Little: X Rays of a Case of Paget's Disease.
Other cases will be shown.

Wednesday, May 7th.

SURGERY: at 5.30 P.M.

Annual General Meeting:
Election of Officers and Council for 1924–25.

Communication:
Mr. W. B. Gabriel: End-results of Fracture of the Patella Treated by Various Methods.

Thursday, May 8th.

NEUROLOGY: at 5 P.M.
Pathological Meeting to be followed by the Annual General Meeting for election of Officers and Council for 1924–25.

Friday, May 9th.

CLINICAL: at 5.30 P.M.

Annual General Meeting:
Election of Officers and Council for 1924–25.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, May 5th.—8 P.M., General Meeting and Reception. 9 P.M., Mr. Wilfred Trotter: On Certain Minor Injuries of the Brain.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, London, W.C. 2.
MONDAY, May 5th.—8 P.M., Extra Meeting. Mr. T. Thorne Baker: Photography in Industry, Science, and Medicine.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.
MONDAY, May 5th.—5 P.M.: Prof. Karl F. Wenckebach (Vienna): Angina Pectoris and the Possibilities of its Surgical Relief.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, May 5th to SATURDAY, May 10th.—CENTRAL LONDON OPHTHALMIC HOSPITAL. Mon., 2 P.M., Mr. Oliver: Conjunctivitis Excluding Trachoma. Tues., 2.30 P.M., Mr. Gibb: Trachoma. 4.30 P.M., Mr. Williamson-Noble: New Growths of the Eye. Pathology. Wed., 2.30 P.M., Mr. Levy: The Lenses of Spectacles. Thurs., 2.30 P.M., Mr. Cunningham: Corneal Ulcers.—HAMPSTEAD GENERAL HOSPITAL, in conjunction with the North-Western Fever Hospital and Paddington Green Children's Hospital. Special Intensive Course.—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars. Clinical instruction in the Out-patient Department every afternoon from 2.30 P.M. Tuesday and Friday, Venereal Clinic from 5.30 P.M. to 7 P.M.—LONDON LOCK HOSPITALS. Clinical work daily. Lectures at Dean-street as follows: Mon., 5 P.M., Mr. Gibbs: Anterior and Posterior Urethritis. Tues., 2.30 P.M., Mr. McDonagh: Treatment of Gonorrhœa and its Complications. Thurs., 4.30 P.M., Mr. Lawrence Abel: Treatment of Acute Gonorrhœa in the Male. Fri., 4 P.M., Mr. Johnston Abraham: Treatment of Gonorrhœa in the Female.—MAUDSLEY HOSPITAL. Mon., 3.30 P.M., and 5.30 P.M., Dr. Bernard Hart: The Psychoneuroses. Tues., 2.30 P.M., Dr. Shrubsall: The Practical Aspect of Mental Deficiency. 4.30 P.M., Sir Frederick Mott: The Pathology of Mental Diseases. Wed., 2.30 P.M., Dr. Mapother: Demonstration in Clinical Psychiatry. Thurs., 4.30 P.M., Dr. Sullivan: Crime and Insanity.

UNIVERSITY OF LONDON, SOUTH KENSINGTON, W.
Lectures and Demonstrations on Medical Hydrology.
TUESDAY, May 6th.—10 A.M., Dr. R. Fortescue Fox: Introductory Lecture. 11.30 A.M., Prof. M. S. Pembrey: The Regulation of Temperature in Health and Disease. 2 P.M., Dr. S. Judd Lewis: The Chemical and Physical Investigation of Waters.
WEDNESDAY.—10 A.M., Dr. R. Fortescue Fox: The Actions and Uses of Baths. 11.30 A.M., Dr. David Brown: The Pharmacology of Natural Medicinal Waters. 2 P.M., Dr. Charles W. Buckley: The British Spas, their Waters and Methods of Treatment (at the Rooms of the Medical Society, Chandos-street, W.). Free lecture to all medical men.
THURSDAY.—9.45 A.M., Dr. G. L. Kerr Pringle: Spa Treatment of the Rheumatic Group of Diseases. 11 A.M., Dr. W. Bertram Watson: The Treatment of some Common Skin Diseases by Baths and Waters.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, May 5th.—11 A.M., Surgical Registrar: Surgical Wards. 12 noon, Mr. Simmonds: Fractures and Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards.
TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 4.15 P.M., Dr. Ackerley: British Spas and Spa Treatment.
WEDNESDAY.—11 A.M., Medical Registrar: Medical Wards. 12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr Pernet: Skin Dept.
THURSDAY.—11 A.M., Mr. Simson: Gynæcological Demonstration. 4.15 P.M., Dr. Ackerley: British Spas and Spa Treatment.
FRIDAY.—10 A.M., Dr. Drummond Robinson: Gynæcological Operations. 11 A.M., Dr. McDougal: Electrical Dept. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Dept.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE. (Prince of Wales's General Hospital.) (At 4.30 P.M.)
MONDAY, May 5th.—Dr. J. Browning Alexander: Thoracic Pain.
TUESDAY.—Dr. F. G. Crookshank: The Management of Diabetes.
THURSDAY.—Dr. A. J. Whiting: Heart Block and Alternation.
FRIDAY.—Mr. E. Gillespie: The Recognition and Treatment of Septic Infection of the Hand.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.
THURSDAY, May 8th.—5 P.M., Mr. Richard Lake: Examination of Case (Geoffrey E. Duveen Lectures in Otology).

CHARING CROSS HOSPITAL MEDICAL SCHOOL.
(University of London Advanced Lecture in Ophthalmology.)
FRIDAY, May 9th.—5 P.M., Dr. J. Van der Hoeve, Professor of Ophthalmology, Leiden: Accommodation.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.
THURSDAY, May 8th.—5 P.M., Mr. Phillips: Childbearing and Heart Disease.

ST. JOHN'S HOSPITAL, Leicester-square, W.C.
TUESDAY, May 6th.—5 P.M., Dr. Whitfield: Principles of Local Treatment.
THURSDAY.—5 P.M., Dr. Knowsley Sibley: Alopecia.

UNIVERSITY OF LIVERPOOL POST-GRADUATE LECTURES. (3.30 P.M.)
MONDAY, May 5th.—(At the Children's Hospital.)
TUESDAY.—(At the Southern Hospital.) Dr. N. B. Capon: Kidney Disease in Children.
WEDNESDAY.—(At the Northern Hospital). Dr. Murray Bligh: Diagnosis and Treatment of Chorea.
THURSDAY.—(At the Stanley Hospital.)
FRIDAY.—(At the Royal Infirmary.) Mr. Guthrie: Foreign Bodies in the Air and Food Passages.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.
TUESDAY, May 6th.—4.15 P.M., Dr. W. B. Anderton: Some Sudden and Unexpected Deaths.

BRISTOL UNIVERSITY POST-GRADUATE DEMONSTRATIONS.
WEDNESDAY, May 7th.—3.30 P.M. (at the Hereford General Hospital), Dr. Carey Coombs: Treatment of Rheumatic Carditis in Children.

Appointments.

DYSON, DOROTHY M. L., M.B., Ch.B. Vict. has been appointed an Anæsthetist to the St. Mary's Hospitals, Manchester.

HOOD, W. D., M.B., Ch.B. Glasg., 3rd Assistant Medical Officer, Baguley Sanatorium.

MORISON, D. M., M.B., Ch.B. Edin., Certifying Surgeon under the Factory and Workshop Acts for the Portree District of the County of Inverness.

TRAQUAIR, H. M., F.R.C.S. Edin., Ophthalmologist to Chalmer's Hospital, Edinburgh.

Paddington Green Children's Hospital: WILLIAMSON, B., M.B., Ch.B. Edin. (House Physician); MORRISON, R. G., M.R.C.S., L.R.C.P. Lond. (House Surgeon).

Vacancies.

For further information refer to the advertisement columns.

Aberdeen Royal Infirmary.—Hon. Asst. Med. Electrician.
Belfast, Queen's University.—Lectureship in Anatomy.
Birkenhead Borough Hospital.—Third H.S. £100.
Birmingham, Yardley-road Sanatorium &c.—Asst. R.M.O. £450.
Bradford Children's Hospital.—H.S. £100.
Cardiff Royal Infirmary.—Two Hon. Asst. Gynæcologists.
Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Hon. Reg.
City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—H.P. £125.
Coulsdon, Surrey, Netherne Mental Hospital.—Third Asst. M.O. £400 to £500.
East Sussex County Mental Hospital, Hellingly.—Pathologist. £500. Also Jun. Asst. M.O. £350.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P., Obstetric Asst., and Two H.S.'s. Each £50.
Essex Administrative County.—Asst. County M.O.H. £700.
Grimsby County Borough.—Ven. Dis. M.O. £750.
Hampstead General and North-West London Hospital, Haverstock Hill, N.W.—Radiologist. £100.
Hertford County Sanatorium, Ware Park, nr. Ware.—A.M.O. £350.
Hôpital Français, 172, Shaftesbury-avenue, W.C.—Sen. and Jun. R.M.O.'s. £120 and £100 respectively.
Hospital of St. John and St. Elizabeth, 40, Grove End-road, N.W.—Asst. Radiologist. £50.
Inverness, Northern Infirmary.—Jun. Medical Resident. £100.
Isle of Wight Union, Newport.—M.O. and Pub. Vacc. £150.
London County Council Education Officers' Dept.—Woman Organiser of Physical Education. £696.
London Jewish Hospital, Stepney Green, E.—R.M.O. £150. Also Jun. R.M.O. £100.
London Lock Hospital, Dean-street and Harrow-road.—Surg. Reg. £100.
Loughborough and District General Hospital and Dispensary, 9, Leicester-road.—Res. H.S. £175.
Middleton-in-Wharfedale Sanatorium.—Asst. M.O. £500.
North Middlesex Hospital, Edmonton, N.—Part-time S. for Throat Dept. £3 3*s.* per session.
Pietermaritzburg, S. Africa, Grey's Hospital.—H.S. £400.
Preston, Fulwood Institution.—R.M.O. £400.
Rangoon Corporation.—Health Officer. Rs.1200 per month.
Rochester, St. Bartholomew's Hospital.—R.H.S. £250.
Royal Dental Hospital, 32, Leicester-square, W.C.—Hon. Radiologist.
Royal Northern Hospital, Holloway, N.—Joint H.P. and H.S. £75. Also Cas. O. £125.
St. Bartholomew's Hospital.—P.
St. Mary's Hospital for Women and Children, Plaistow, E.—Res. M.O. £175. Asst. R.M.O. £130.
Salford Ladywell Sanatorium.—Sen. R.M.O. £600.
Sheffield Royal Hospital.—Cas. O. £150.
Union of South Africa Government Mental Hospital Service.—A.P.'s. £460.
Whitelands Training College, Chelsea, S.W.—M.O.
Wolverhampton and Midland Counties Eye Infirmary.—H.S. £200.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Patrington, Yorks (E. Riding); Abersychan, Monmouth; Kemnay, Aberdeen; Lostwithiel, Cornwall; Fordoun, Kincardineshire.

The Secretary of State for the Home Department gives notice that, in consequence of the resignation of Mr. A. E. Maylard, one of the Medical Referees under the Workmen's Compensation Act, 1906, a fresh appointment will have to be made for the County of Lanark. Applications for the post should be addressed to the Private Secretary, Scottish Office, and should reach him not later than May 17th.

Births, Marriages, and Deaths.

BIRTHS.

CRISP.—On April 24th, at Hevenyngham, Suffolk, the wife of Lieut.-Colonel G. B. Crisp, R.A.M.C. (retd.), of a son.

FITZMAURICE-KELLY.—On April 15th, at Brunswick-square, Hove, the wife of M. Fitzmaurice-Kelly, F.R.C.S., of a daughter.

WATKINSON.—On April 17th, at Dartmouth, the wife of Dr. A. A. Watkinson, of a son.

MARRIAGES.

CRAN—COCHRANE.—On April 23rd, at Holy Trinity Church, Sloane-street, W., Disney Cran, M.D., F.R.C.P. Edin., to Peggy, only child of Mr. and Mrs. T. A. Cochrane, of Ladbroke-grove, W.

GLADSTONE—BOWER.—On April 24th, at St. Lawrence's Church, Middleton St. George, Frederick Charles Gladstone, M.A., M.D., to Winifred Rosamond, elder daughter of Mr. and Mrs. W. A. Bower, of Middleton St. George, Co. Durham.

HUGHES—NYE.—On April 26th, at St. Anne's Catholic Church, Vauxhall, Richard Lawlor Hughes, M.R.C.P., to Lilian Mary, youngest daughter of the late F. W. Nye, Esq., of Bromley, Kent.

MILNE—TOD.—On April 22nd, at Holy Trinity Church, Stirling, Captain Herbert Stewart Milne, M.C., R.A.M.C., youngest son of the late Dr. and Mrs. Thomas Milne, Aberdeen, to Alice Christian, eldest daughter of Mr. and Mrs. Frederick Tod, of Snowdon-place, Stirling.

MONTAGUE-WHITE—ROWLAND.—On March 29th, 1924, at St. Stephens, West Coast, Demerara, by the Rev. Salmon, Alan Douglas Macleod Montague-White, of the British Guiana Police Force, youngest son of Montague Montague-White, Esq., of Invernesshire, Scotland, and Southsea, Hants, to Nathalie Blanche, daughter of Ernest D. Rowland, M.B., C.M. Edin., L.S.O., J.P., and Mrs. Rowland.

PROCTER—MORLEY.—On April 24th, at St. Barnabas's Church, Heaton, Bradford, Robert Arthur Welsford Procter, M.C., M.A., M.B., Ch.B. Camb., to Kathleen Mary, eldest daughter of Mr. and Mrs. H. W. Morley, of Park-drive, Bradford.

TAUNTON—MASTERTON.—On April 22nd, at St. Mary's, Dover, Richard Eustace Maxwell Taunton, M.B., Ch.B., to Dorothy, younger daughter of W. N. Masterton, R.N.R.

DEATHS.

BERRIDGE.—On April 22nd, 1924, William Alfred Berridge, M.R.C.S., of 7, Radnor Park West, Folkestone, formerly of Oakfield, Redhill, Surrey, aged 70 years.

BULL.—On April 19th, at a nursing home, following an operation Harry Ashworth Bull, M.R.C.S., L.R.C.P., of Great Haywood, Staffs., aged 52.

RAYNER.—On April 26th, suddenly, from heart failure, Hugh Rayner, late Surgeon Lieut.-Colonel Royal Horse Guards and 3rd Batt. Grenadier Guards, of Upper Montagu-street, W., in his 64th year.

WHITE.—On April 20th, at Framingham Earl, near Norwich, Richard Wentworth White, M.R.C.S., L.D.S., aged 76 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

MANAGER'S NOTICES.

THE Manager of THE LANCET would like to purchase copies of the issue of Feb. 2nd, 1924, for which subscribers may have no further use. He will be pleased to pay 1*s.* each for them. Such copies should be addressed to him at 423, Strand, London, W.C. 2.

THE LANCET: SUBSCRIPTION RATES.

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SMALL ADVERTISEMENT RATES.

Books and Publications .. .. .. } Four Lines
Official and General Announcements .. } and under 6*s.* 0*d.*
Trade and Miscellaneous Advertisements }
Every additional line 1*s.* 6*d.*

DONATIONS AND BEQUESTS.—The late Mrs. Jane Kay Hampson, of Knightsbridge, left by will, among other bequests, £1000 to the Hospital for Incurables, Mauldeth, Heaton Mersey, Manchester; £1000 to the Cancer Hospital, Fulham; £500 to the London Hospital; £500 to the National Institute for the Blind, Great Portland-street, London; and £500 to St. George's Hospital. Part of the residue will be divided between the National Institute for the Blind, the London Hospital, and St. George's Hospital.—The St. Mary's Hospitals, Manchester, have received the following legacies: £1500 from the executors of the late Mrs. Elizabeth Shufflebotham, £1946 from the executors of the late Anna Matilda Swain, £250 from the executors of the late John Greaves.—Mr. John George Litton, of Heaton Chapel, Stockport, and Manchester, has left £28,770 by will. Besides numerous small legacies he left the residue of the property for hospitals and institutions for the relief and care of the sick in Manchester and Stockport, to be selected by the executors.

Notes, Comments, and Abstracts.

COLONIAL HEALTH REPORTS.

JAMAICA.

THE estimated population at the close of 1922 was 885,692. The birth-rate for the year was 37·3 and the death-rate 22·9 per 1000. The total infantile death-rate under 1 year was 17·7 per 1000. The principal causes of death among the inhabitants of Kingston, the capital, were: Diarrhœa and enteritis, 6·7; atrophy, icterus, and scleroma of the new-born, 10·9; phthisis, 10·8; enteric fever, 7·0; pneumonia, 5·3; heart disease, 6·2; chronic Bright's disease, 4·3; cerebral hæmorrhage, apoplexy, 4·4. Matters in connexion with the health and sanitation of the island continue to receive the earnest attention of the Government. The International Health Board of the Rockefeller Foundation are actively engaged in the treatment of hookworm in the parish of St. Catherine, and it is proposed to extend operations to other parishes. During the year the chief sanitary medical officer assumed duty, and it is anticipated that an efficient sanitary staff will be organised to cope with public health conditions requiring betterment. The recrudescence of alastrim (Kaffir pox) still existed during 1922, but the mortality was abnormally low, and vaccination has proved to be a very substantial protective measure. The average rainfall for the year was 52·38 inches, which was considerably below the average for the past 50 years (76·46 inches). In Kingston the mean temperature for the 12 months was 78·7° F., the highest maximum was 93·5° in July and the lowest 64·6° in January.

FALKLAND ISLANDS.

The estimated population on Dec. 31st, 1922, was 1205 males and 937 females, total 2142. There were 55 births (30 males and 25 females) during the year, and 15 deaths (6 males and 9 females). The health of the colony was good, there being no sickness of a serious character recorded. The rainfall for the year was low. Continuous dry weather was experienced for 54 days in the months of November and December. The largest number of days on which rain fell in one month was in September. The highest temperature recorded was in December, when 69° was reached. Constant strong winds prevail during October, November, and December, rising at daybreak and falling towards evening. Severe storms are of less frequent occurrence and intensity than in the United Kingdom. The average temperature in West Falkland is higher than in the East Island. This is thought to be due to the presence of a warm current which exists in the vicinity. There is little doubt (it is remarked in the annual report) that the climate on the whole is one of the most salubrious in the world. There are neither endemic nor epidemic diseases. It has been frequently stated that there is some danger in the alleged rigour of the climate for persons predisposed to pulmonary affections, but no support can be found for the theory, and medical officers stationed in the colony have given it as their opinion that the Falklands can be recommended as a health resort for such persons. The dependencies of the colony consist of several groups of islands, comprising a total area of land and sea of more than 3,000,000 square miles. South Georgia, the principal island in these dependencies, lies in latitude 54½° S. and longitude 36° to 38° W.; it has an area of about 1000 square miles, and is a mass of high mountains covered with snow, while the valleys between are filled with glaciers which in many cases descend to the sea. The coastal region is free from snow in summer and more or less clothed with vegetation. During 1922 rain fell on 121 days, and observations show that snow falls on an average on 124 days in the year and hail on 43. South Georgia is the only part of the dependencies which is permanently habitable. It has a fluctuating population of over 1000. Five land stations have been established there by whaling companies.

THE VARIVANE SUPPORTS.

WE have received from the Varivane Co., 56, Borough High-street, London Bridge, S.E. 1, samples of the forms of support which they make for the subjects of varicose veins, phlebitis, and conditions described as synovitis, and "loose cartilage." The samples sent include a support for the calf and ankle combined, and separate supports for calf and ankle, a support for the thigh and knee, and separate supports for the knee. The appliances are all made of canvas stiffened at the lace eyelets, the object of the inventors being to produce an efficient substitute for elastic stockings. The even pressure of elastic stockings cannot, we think, ever be obtained by any other appliances, but, as both doctors and their patients know well, the life of an elastic stocking is limited by the period of its elasticity, and when the vital property is lost in one place the whole stocking tends to become useless. The material of which the Varivane supports are made is durable, and if the appliance has been properly fitted in the first place, we can understand that it should last a very long time with a considerable saving of money in comparison with the expense of using elastic devices. The stockings and other supports are easy to put on and take off, can be washed, and can be readily repaired.

BOLOGNA MEDICO-CHIRURGICAL SOCIETY.

WE have received from this Society an announcement in Latin of the festivities in celebration of the coming centenary of the Society in June. The text runs: If those who wish to be present, and cannot, will signify by letter to Prof. Dagnini their goodwill and approval, such expressions will give great gratification. And that the authorities may in return display some mark of appreciation, they will forward to the signatories a copy of the commentaries of the Society, which will be issued shortly.

MEDICAL LITERATURE FOR MISSIONARY DOCTORS.

To the Editor of THE LANCET.

SIR,—May I through your columns make known the need of medical literature by members of the medical profession who work in hospitals scattered over the world? Copies of THE LANCET or other medical papers would be greatly valued when finished with. I will gladly supply addresses to which such literature may be sent: it should not be addressed to me.—I am, Sir, yours faithfully,

B. GAMBIER PARRY,
S.P.G. Secretary for Medical Literature.

Westhaven, Leckhampton, Cheltenham, April 24th, 1924.

REGISTRATION OF MEDICAL STUDENTS.

AT a recent meeting of the Senate of the University of London it was resolved that the following paragraph be substituted for the second footnote on p. 1 of the Regulations for Matriculation, and that it be inserted in the Regulations in Medicine (Red Book, 1923–24, p. 219): "The Medical and Surgical Degrees of this University are registrable qualifications to practise, and, *though desirable*, it is not necessary that students should register as Medical Students in order to qualify themselves to enter for the examinations for these Degrees. For the Diplomas of certain other Licensing Bodies, however, registration as a Medical Student by the General Medical Council is a necessary preliminary, and students should obtain particulars from the Registrar to the General Medical Council, 44, Hallam-street, Portland-place, W. 1." The italics are ours, and indicate the words which mark the difference in the sense of this paragraph from footnote 2 to the Regulations for Matriculation set out as an appendix to the University of London Calendar, 1923–24.

PROFESSIONAL AND BUSINESS WOMEN'S HOSPITAL LEAGUE.

AT the annual meeting held at 29, Grosvenor-place recently, Miss Corry presiding, it was stated that the total membership on Dec. 31st last was 1649 benefit members, and about 250 hon. members, against 996 benefit members, and about 200 hon. members on Dec. 31st, 1922; 776 new ordinary members have been enrolled during 1923. The League was founded in 1913 to make provision in severe sickness for women who earn their living in professional and business callings. The ordinary benefits available are: (1) Four weeks' treatment in a hospital specified by the committee, either in London or in the provinces; (2) free consultation with a gynæcologist, should such a step be necessary; (3) a reduction of cost on surgical appliances. Certain cases, which do not fall into the above classes, are given special grants on a doctor's certificate. The age limit for benefit members on joining was discussed, and this was fixed at 55. Eighty-six claims were received during the year, of which 49 were met by hospital treatment, consultation, or money grants. Of the rest, 9 cases were ineligible for benefit, 15 were withdrawn, and 13 were refused.

Erratum.—In Sir William Collins's note last week on Chadwick's Later Work he is made to say: "Many of his [Chadwick's] addresses and essays were in *English*, which he wrote with ease." The italicised word should, of course, have been *French*, and we regret the printer's slip none the less that it can have misled no one.

"A SAFE LITTLE HEATING LAMP."—Messrs. Ahlmann, Ltd., inform us that the price of "Meta" N.P. Candle with wood base, No. 20, on which we commented favourably (THE LANCET, April 19th, p. 834), is 4*s.* 6*d.* This implement has been specially constructed for sterilising small surgical and medical instruments, and also for heating the contents of test-tubes.